Thursday,

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PRODUCING REFINING MARKETING

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Crude Production Decline Continues

Average daily production in United States week ending Dec. 15, 1,967,417 bbls.

Output Now Well Below 2,000,000 Bbls. Daily. Price Increases Expected Soon With Prosperity Seemingly Assured

Loss in daily production in United States week ending Dec. 15, 29,120 bbls.

By Andrew M. Rowley

The production of crude petroleum in all fields of the United States continued to decline during the past week and the total output now is well below the 2,000,000-barrel-a-day mark, the decrease of last week bringing the total average daily production to 1,967,417 barrels. While the drop of last week was much less than for the three preceding weeks, it was considerable in relation to the total production of the country and serves to further emphasize the fact the period of overproduction of crude petroleum has been passed definitely. The decrease last week, amounting to an average of 29,120 barrels a day, brings the total drop in crude production of the past four weeks to 292,611 barrels daily.

As the overproduction of crude petroleum was responsible for the depression experienced in all branches of the oil industry during the past year, so has the immense decline in production during the past month been responsible for the entire change of feeling and outlook upon the part of the industry. It is conceded this decrease in production, bringing as it does the output of crude petroleum about on a par with the consumption of this product, is the one big factor which makes prosperity possible and seem assured for the coming year.

Many Signs of Coming Prosperity

Several developments of the past week showed the trend of the situation affecting the crude market as well as the situation affecting the petroleum industry in general, and the results being experienced already from the great decline in production of crude. All grades of Pennsylvania crude were advanced 25 cents a barrel, indicating the purchasers in that section of the country were desirous of obtaining crude. Premiums had been paid by refiners in the Pennsylvania area for some time and it is said some premiums are still being paid even above the advance in price. In North and North Central Texas, The Texas Company posted a new schedule of prices which meant an increase of from 15 to 30 cents a barrel above what this company had been paying for the higher gravities of crude in that area. The new prices for the higher gravities, however, are the same as had been paid by the Humble Oil & Refining Company for some time past. The Magnolia Petroleum Company met The Texas Company prices. The action meant an increase in price of the higher gravities for many producers whose oil had not been purchased by the Humble Oil & Refining Company and shows the crude situation in North and North Central Texas is tightening and that the major purchasing companies are making greater efforts to obtain oil.

Oklahoma producers expect an increase in the posted price of crude and look for an announcement by the Prairie Oil & Gas Company, the dominant purchaser, almost any day. Whether this increase will be announced before the first of the year is, of course, everyone's guess. There is little doubt but that an increase will be announced in the near future. One large refiner announced late last week he will pay 50 cents a barrel above the posted price of a certain gravity of crude, his price being $1.75 a barrel while the posted price is $1.25. This indicates this refiner at least is having difficulty obtaining enough crude to meet his requirements.

Equipment Concerns Busy

One barometer of the feeling general among oil men is the orders being placed with supply houses and equipment concerns for materials for development work being planned. While leaders of the industry are warning against any sudden or great increase in drilling operations, oil men already are planning for a big year in 1924 and expect to start active operations early in the spring. The extent of new operations planned may be gauged from an order announced this week and placed by the Midwest Refining Company at Casper, Wyo. It was stated that company ordered 160 derricks, 160 rig irons and 160 bull wheels.

PRODUCTION IN THE UNITED STATES

Estimated daily average production in the oil fields of the United States for the week ended December 15, and a comparison with the previous week follows:

Field	Dec. 15	Dec. 8
Oklahoma—Northern Fields:		
Tonkawa	46,950	48,320
Burbank	76,100	78,800
Other Osage Fields	29,900	30,100
Cushing and Shamrock	24,430	24,440
Bristow and Eastern Bristow	47,625	47,125
Northern Miscellaneous	89,020	86,115
Southern Fields:		
Healdton	17,320	17,325
Hewitt	20,970	21,125
Southern Miscellaneous	24,915	24,945
Total Oklahoma	377,230	378,295
North Louisiana	55,200	56,705
Arkansas—		
El Dorado	11,190	11,385
Smackover Light	20,215	16,900
Smackover Heavy	78,675	80,800
Other Arkansas Fields	10,585	10,640
Total Arkansas	120,665	119,725
North Central Texas	113,805	117,220
East Central Texas (Mexia, Currie, Corsicana, Powell)	153,359	169,445
Kansas	70,900	71,300
Total Mid-Continent Area	891,159	912,690
Gulf Coast	92,795	94,148
Eastern	110,465	110,525
Wyoming-Montana	158,998	147,174
California—		
Santa Fe Springs	185,000	195,000
Long Beach	229,000	240,000
Huntington Beach	70,000	69,000
Torrance	32,000	31,000
Remainder State	198,000	197,000
Total California	714,000	732,000
Total United States	1,967,417	1,996,537

Decrease, 29,120 Barrels

With production of crude petroleum getting down to a point where stocks must be drawn upon to meet the demand, the oil man feels justified in preparing for an active drilling campaign in the near future. The larger companies feel that resumption of activity along this line should be gradual in order to prevent a return to conditions which obtained during the greater part of this year, but the fact remains the one big factor in the depression of the past year was the Powell Field in Texas. The output of that field alone was largely responsible for the overproduction situation and with its approaching a settled condition, the situation of the country in general became improved.

Powell and California Down Again

The daily average production of the Powell Field dropped to 108,709 barrels last week, a decline of 16,071 barrels daily as compared to the preceding week. Early this week the production was down to 91,000 barrels daily, seeming to bear out a prediction made in these columns before that production of the field would settle to from 85,000 to 90,000 barrels a day after the wells were placed on the pump. The production of Powell from its beginning emphasizes the effect this field had on the general situation during the past year. In the first six months of 1923, the field produced a total of 510,000 barrels. Then it jumped to an output of 2,114,460 barrels for July, producing in that one month more than four times its total output of the six months before. In August it produced 3,848,893 barrels, in September, 5,277,255 barrels; October, 7,678,700 barrels, and last month, 8,278,800 barrels. A comparison of this production with the amount of crude placed in storage in the United States in the various months during the recent depression shows that without the Powell production, there would have been little excess production throughout the United States. Of course, with Powell out of the running, conditions in other fields, except California, would have been different. At the same time, the Powell Field is a shining example of what one field in the entire United States can do to the whole oil business.

California recorded another substantial drop in production during the past week, the decline amounting to 18,000 barrels daily. The total production of the State amounted to 22,397,848 barrels in November for a daily average of 746,595 barrels. This average is lower than the output of last June, which totaled 755,570 barrels, and is 112,155 barrels lower than the daily average for last September, the premier producing month for the State.

The Salt Creek Field was largely responsible for an increase of more than 10,000 barrels a day in the output of the Wyoming-Montana area. The North Texas district showed a decline of more than 3,500 barrels daily while a substantial increase in the production of the light oil district at Smackover offset losses in other fields in that district. Production of the Gulf Coast area continued to decline, dropping to 92,795 barrels a day. The demand for Gulf Coast crude for lubricants continues good and there is a general expectation that the price of crude in that district will be advanced in the near future.

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Must Work Together—A. C. Bedford

Chairman of New Jersey Standard Tells Petroleum Institute it Should Take Leadership and Make Recommendations

By A. C. Bedford
Chairman of the Board of Directors of the Standard Oil Co. of New Jersey
(From an Address Delivered at the Annual Dinner of the American Petroleum Institute, St. Louis, Mo., Dec. 13)

During the past year the petroleum industry has been subjected to investigation. Just before the last Congress adjourned the La Follette Committee submitted its report following, though I can hardly say based upon that investigation. The report seemed to many of us so foreign to the main body of testimony submitted before the committee that some of us could not but feel that the report might very well have been written before the investigation had taken place.

The purpose of the report was clearly to seek to impress upon the public the desirability of legislation intended to regulate the petroleum industry. As a high spot in the report it was predicted that the tendency of oil prices would be to mount higher with the prospect of "dollar gasoline" soon appearing upon the horizon.

Many of those engaged in the petroleum industry attempted to point out the fallacy of the La Follette report. But far more than any such verbal answers has been the effective disproof afforded by the economic events which have taken place since the report was made. Instead of gasoline prices moving towards the heights pictured by Senator La Follette, the whole tendency has been in the opposite direction.

Must Tell the Public

It is essential that the petroleum industry should fully explain to the public what are the actual economic and business conditions of the industry, and the necessity of the industry having the greatest opportunity to respond to the normal operation of economic laws. It will be our own fault if we suffer from the public action because we have allowed critics, through ignorance or otherwise, to create the impression that there is something wrong with the industry, when as a matter of fact there is nothing whatever fundamentally wrong with it.

Dr. Edwin G. Slosson, Director of Science Service, Washington, states that the best estimate of annual expenditure on motor cars in this country for 1921 was a total of $7,783,000,000. Of this huge sum the gasoline cost amounts to $823,000,000 or about 10 per cent. yet I venture to say that that 10 per cent causes more agitation and comment than all the rest of the 90 per cent which the public spends.

People are asking today if the price of gasoline is justified. I want to say as emphatically as I can that the price is too low. How much of anything else can you buy for the price of a gallon of gasoline? It now takes two gallons of gasoline to purchase the same quantity of anthracite coal that could be purchased for one gallon in 1913.

Below Pre-War Price

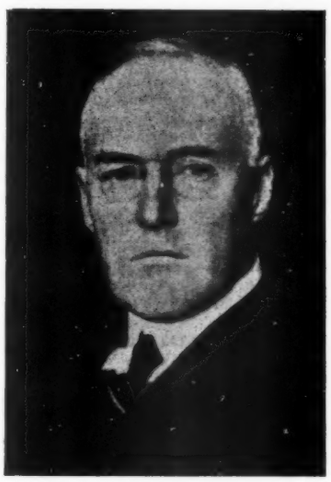
It now takes 1.8 gallons of gasoline to purchase the same amount of railroad transportation that one gallon would have purchased in 1913. It takes over 1⅓ gallons of gasoline to purchase the same quantity of farm products that one gallon would have purchased in 1913. The general average wholesale price of gasoline in the United States is, in my judgement, below 14½ cents per gallon. This 14 cents per gallon is the equivalent of 9⅛ cents in 1913.

The railroad freight rate classification authorizes an estimated weight of 6.6 pounds per gallon of gasoline. If we were selling gasoline by the pound on the present basis we would be receiving less than 2½ cents per pound for it. Is there any other commodity of general use which can be obtained at anything like that price, and is there any other commodity produced under similar conditions which is so available and so useful to the American public? Is there any other commodity in general use which is selling at a price below its prewar level?

Everyone knows, of course, that the oil business has been faced this year with unprecendented conditions. There has been an enormous production of oil, far in excess of current requirements, and yet current requirements themselves have been very great. With such conditions on the one hand, evident requirements of the future facing us on the other, it has been but natural that different opinions should have developed as to the wise policy which should be followed in meeting the situation.

Two Opposed Policies

One school has said that it was the duty of the industry to maintain a fairly stable and reasonable price for crude oil in spite of the flush production taking place in California and the Mid-Continent Field, and in spite of the fact that regard for temporary conditions only would justify a lower price. The idea was that such a level of prices would enable producers of the older and smaller producing wells to continue production, and that a vigorous reduction in prices would result in a loss of a considerable proportion of the production itself, a loss of that stable production which many regard as the backbone of the industry.



A. C. Bedford

There was another school of thought in the industry which maintained that the economic law of supply and demand which has always governed the industry should have free play at all times. It has been urged, and particularly by the marketing side of the industry, that the immediate operation of these economic laws should not be interfered with, and that, as no one could tell how long the flush production would be maintained and what would be the business conditions to be faced in the future, it was better, that the present price should respond to the actual conditions of supply, and if later conditions required an increase in price, the price structure should follow the changed situation.

Here, then, we have two perfectly honest attitudes of mind controlling policies of respective companies, policies which have been actuated by these different viewpoints, and each interest humanly inclined to the course which promised the greatest advantage or which seemed to it to possess the greater potentialities for the general good, and this has applied to the whole industry.

Standard Dissolution

Certain commentators and stock market historians have discerned variations of policy among what has been known as the "Standard Oil Group" and this has been proclaimed a new and significant development. It is in fact neither new nor significant of any changed policy. The comments of these writers are possibly the first appreciation of a fact that has existed since the Standard Oil Co. was dissolved by order of the Supreme Court.

It has always been the duty and ambition of the administrators of the Standard Oil Co. (New Jersey) with which I am associated, to discharge the weighty duties placed upon them, solely with regard to the responsibilities of that individual unit. In this, as in every other policy since 1911, there has been no concerted action among the so-called "Standard" companies. One effect of the present crisis has been, therefore, to bring to public attention the fact which has been continuously reiterated by my associates and myself, but which apparently required an actual demonstration to be convincing.

Cooperation Essential

We saw what cooperation could do for the industry during the war; cooperation in the full light of day; cooperation in partnership with all government agencies; cooperation along with proper competition. I must urge closer cooperation and more united action within the industry, and yet I do not advocate a closer cooperation of any particular group or division. I urge general cooperation embracing every unit, large and small, engaged in any of our varied activities.

The period of greatest growth and expansion in the oil industry has been in an era which witnessed the birth almost daily of new competitors and of almost phenomenal development of the power and strength of new units in the industry. That was due to the fact that the uses and consumption of petroleum products were multiplying so rapidly that any undertaking soundly established and efficiently conducted would sooner or later perforce find a place in the world's petroleum markets.

The real question which faces the petroleum industry is this: Are we going to get together and stand shoulder to shoulder to fight the situation out along sound lines and in the interest not alone of ourselves but of the public, or are we going to fall a victim of dissension and bickering among ourselves, dissension over petty matters which cannot but give to the public an entirely erroneous view of the fundamental factors which govern the opportunities of this industry to progress and service?

Tolerance and Unity

I believe that if we will rise to the height of this great argument, and each of us accord to our competitors in the business that confidence in their honesty of views which we want them to accord to us, that if we center our attention upon the larger matters and subordinate our feelings as to the smaller ones, if we look to the welfare of the industry as a whole rather than to the selfish interests or to the temporary advantage of any particular company or element in the industry, we can then well appeal to the public for the confidence and support which we feel to be necessary.

Let us then get back to fundamental principles and start the New Year with a united front. Let us make the American people see that it would be impossible for the petroleum industry to accomplish what it is accomplishing and to accomplish what it has accomplished if the business were fundamentally unsound or if the business was not conducted upon right and proper lines.

The foregoing are some of the thoughts we must ourselves take into account, and which we must bring clearly, fearlessly and aggressively to the attention of the public.

Need for Leadership

There has been some talk of the lack of sound leadership in the industry, and in closing I should like to devote a moment to that thought. If by leadership it is meant that certain companies or individuals shall exercise domination, or that some factors in the industry should use their power to stabilize prices and to otherwise exert a control upon the industry, my answer is that the law of the land forbids any such thing. If the law did not do it, I still doubt whether, now that the industry has become so enormous in size, it would be possible for any such result to be accomplished, anyway. But if by leadership you mean that the industry should establish a set of sound business principles under which its activities as a whole should be carried on, then I say to you that we indeed have need for just that kind of leadership.

We should be mindful that every business enterprise is more or less related to all others. We are all an integral part of a vast and complex economic structure. Each has a responsibility and a duty to perform towards all others and all are to a greater or less extent affected with public interest.

Example From Golf

Some of you play golf. You know that although there are golfers and golf clubs situated in all parts of the world, each of them being in a sense a law unto themselves, but you know, too, that there is an institution in Scotland known as the Royal and Ancient Golf Club of St. Andrews which shapes the rules and practices which are recognized as good golf and good sportsmanship throughout the world.

It seems to me that the American Petroleum Institute should exercise that leadership in the petroleum industry which the Royal and Ancient Golf Club of St. Andrews exercises in the world of golf. The control is only a moral control but is a control based upon such recommendations for the welfare of the sport and the healthful progress of the game that golfers throughout the world are delighted to acknowledge and follow the leadership of St. Andrews.

Working together, forgetting our minor differences, standing together, believing in one another, we can really promote the welfare of the petroleum industry.

OKLAHOMA WILDCAT

Information about the Bassett & Storm wildcat well in northwestern Okfuskee County, No. 1 Dyer, NE cor. NW, Section 12-13-7, is conflicting, but a reliable report has it as making no more flows after being drilled 3 feet deeper, sand depth now being 3,549-55 feet. Last week it was swabbed, making 175 bbls. and flowed 500 bbls. once. It had been good for 50 bbls. daily for about a month.

Oil Industry Benefited By Convention

Exchange of Ideas Resulted in Better Understanding of Problems Affecting Each Branch. Wider Utilization Given Impetus

By James McIntyre

If there ever was any doubt as to the strength and permanency of the American Petroleum Institute it was dispelled by the tremendous success of the fourth annual meeting held in St. Louis December 11, 12 and 13. The three days' meeting was a liberal education in all branches of the oil business, producing, transporting, refining and distributing as well as the utilization of oil and its products. It is safe to say that many men engaged in each of the four branches of the oil business and in the automotive and oil burner business, added considerably to what they knew of their own part of the oil business and considerably more in proportion to what they had previously known of the other branches.

The utilization of petroleum products, which was one of the features of the program, was given great impetus by the lead-off address of Henry L. Doherty, president of H. L. Doherty & Co., followed by the papers of other speakers representing the oil business and the oil burner business, who talked to each other in language calculated to give the other a better understanding of the problems of both, and bringing them nearer to that point of cooperation so necessary in the success of the furtherance of a more general use of oil for fuel and heat.

The campaign of standardization of oil field equipment from derricks to belting was advanced. A part of the standardization program passed out of the hands of the committees in completed form and was referred with approval to the board of directors of the Institute. Unfortunately, the standardization of derricks and rigs was unsettled and as this is the foundation of the whole program of standardization it subjects the general program to delay, as it will be impossible to standardize rig irons until the matter of derricks and rigs is agreed upon.

Telling It to the Public

The importance of an understanding between the oil industry and the public was emphasized by a number of speakers. C. F. Kettering, research engineer of the General Motors Corp., in the strongest terms advised the broadest of advertising campaigns to get to the public the complete story of oil from production to consumption.

"You can hand this out in a little pamphlet at the filling stations," he said, 'and I tell you as a user of an automobile, that if I knew the story of a gallon of gasoline as you men know it I would feel I was doing myself a favor when I paid you an increase in the price of gasoline."

The research program was engaged in by some of the brightest minds in the oil and the automotive business. The technical men of the refining trade and the automotive trade are working together with a better understanding each year. Men who study to improve the efficiency of internal combustion engines declare that the average efficiency of the motor car is only 5 per cent and that when they tell the refiners they want a fuel that will double the mileage of a motor car they are asking only that the loss in efficiency be reduced from 95 per cent to 90 per cent. The motor car men at this year's Institute meeting told their brethren of the refining trade what they had accomplished in increasing the usefulness of the motor, and what they expected of the refiners in the coming year in the way of a "good gasoline" that would best serve the purpose of driving cars with the greatest degree of economy and efficiency.

Spirit of Democracy

A strong feature of the three days' meeting was the complete spirit of democracy that prevailed. Men of all degrees of importance in the trade met on a perfectly equal footing and enjoyed one another's companionship. Men of large affairs forgot their business responsibilities, made a holiday of the meeting and enjoyed it to the utmost. The attendance was the greatest the Institute has ever had and the interest and enjoyment of the three day's gathering was such as to guarantee an even larger attendance next year. The question of the 1924 meeting place will not be settled until about two months before the date set for the next annual session, but North Texas oil men were working hard for Fort Worth, and California oil men for Los Angeles, while Atlantic City offered every inducement to make that city the convention point. The claims of Tulsa were also put forward informally, provisional upon the completion of its big hotel, now building.

The organization of the American Petroleum Institute for the year 1924 was effected by the board of councillors at the first day's meeting when they met and chose the directors to succeed those whose terms had expired. The board of directors met late Thursday and elected officers for the coming year, choosing the same board that had served in the past year: President, Thomas A. O'Donnell; vice presidents, R. D. Benson, Henry L. Doherty, J. W. Van Dyke; treasurer, Harry F. Sinclair; secretary and general counsel, R. L. Welch; assistant secretary and counsel, W. R. Boyd, Jr., and assistant treasurer, Lacey Walker. The executive committee elected is composed of the president, three vice presidents and treasurer and A. C. Bedford, E. C. Lufkin, E. L. Doheny, W. N. Davis, J. Howard Pew and Col. Robert W. Stewart. The membership committee elected is composed of J. S. Cosden, John H. Markham, Jr., Capt. J. F. Lucey, W. B. Farrish and J. C. Donnell.

Price Advance Disturbing

For perhaps the first time in the history of oil production an advance in the price of crude was received by oil men without great enthusiasm. When rearrangements of the price schedules in the North Texas fields were followed by an announcement of a 25-cent advance in the price of Pennsylvania crudes, the consensus of opinion at the institute meeting was that the advance was premature and that it might lead to a return of the very condition out of which the oil industry believes itself passing.

"The purchasing companies are again buying on anticipation," said one well known economist, commenting on the action of the Eastern buying agency. "They usually advance the price long before they should and maintain it long after they should. They put the market up on anticipation and keep it up on hope, and that is one very good reason why production and consumption cannot be kept closer together."

The Banquet

The banquet held Thursday evening at the conclusion of the series of business meetings was attended by over 600 men. Thomas A. O'Donnell was toastmaster. When he announced that the meeting of the board of directors had resulted in the re-election of himself as president and of his brother officers it was received enthusiastically.

The speakers of the evening were C. F. Kettering, research engineer of the General Motors Corp.; Julius H. Barnes, president of the Chamber of Commerce of the United States, who spoke in an interesting way on business generally; and A. C. Bedford, chairman of the board of directors of the Standard Oil Co. of New Jersey, who, as usual, had something well worth hearing. In introducing Mr. Bedford, President O'Donnell again called attention to the splendid service Mr. Bedford had performed on the War Service Board during the late war.

Many of those in attendance remained over until Friday evening and spent that day in a renewal of acquaintanceship and a general discussion of the business situation of the coming year in so far as it concerns the oil business.

No progress was made on the standardization of rigs and derricks. A part of the committee met but not enough to make it possible to come to any conclusion satisfactory to all concerned. This was deemed unfortunate because little can be done in furthering standardization of rig irons until the question of rigs and derricks is settled. The standardization of drilling cable also evidenced a lack of progress when compared with other oil field supplies, and will have to be made the work of the future.

STANDARDIZATION OF RIG IRONS REPORT APPROVED BY INSTITUTE

The committee on rig irons reported to the A. P. I., having invited the rig iron manufacturers to attend a meeting held in St. Louis, January 17, 1923, response to the call being as follows: Alamo Iron Works, not represented, but wired accord with the movement; Bakersfield Iron Works, not represented, but wired willingness to cooperate; Enid Foundry and Machine Shop, not represented. Wired cooperation; Keystone Iron Works, not represented, but wired favor of the movement; Bradford Rig & Reel Co., represented by F. J. Bradford; Lucey Manufacturing Corporation, represented by H. M. Harris; Locomotive Finished Material Co., represented by H. E. Muchnic; Marion Machine, Foundry and Supply Co., represented by E. B. Smith; Mosher Manufacturing Co., not represented but wired sympathy; National Supply Co., represented by John Geismar and R. F. Hill; Oil Well Supply Co., represented by Thomas Fleming and E. E. Grieve; Parkersburg Rig and Reel Co., represented by H. J. Lockhart and A. V. Wadsworth; Oklahoma Iron Works, represented by R. S. McKeever; Union Tool Co., represented by D. S. Faulkner; United Iron Works, represented by F. J. Bradford, as proxy; Western Iron & Foundry Co., not represented but in favor of the movement.

The manufacturers' representatives were organized into a general committee, which agreed the work could be best accomplished by a smaller committee composed of the skilled engineers of leading manufacturers of rig iron outfits, and the following were selected: F. J. Bradford of United Iron Works Co., E. E. Grieve of Oil Well Supply Co., R. F. Hill of the National Supply Co., H. M. Harris of Lucey Mfg. Corp., R. S. McKeever of Oklahoma Iron Works Co., E. B. Smith of Marion Machine, Foundry & Supply Co., and Chairman A. V. Wadsworth of the Parkersburg Rig & Reel Co.

The geneal committee passed the following resolution: "Resolved that the manufacturers here represented adopt as their standards such measurements as the working committee may agree upon."

As the committee proceeded it was found rig iron outfits of various makes could be made to correspond in measurements to such an extent as to permit users to interchange similar parts of all outfits and at the same time permit the different manufacturers to retain or originate distinctive features of merit in the various items involved. As an example: A standardized band wheel flange would have a uniform bore, key-way, bolt holes and bold circle. But there is no reason why the manufacturer cannot offer to the trade a flange with a different num-

It would be your committee's recommendation that, if the measurements recommended are acceptable to the directors of the A. P. I., they initiate a movement looking to the adoption of what can be referred to as an "American Petroleum Institute Standard Rig Iron Outfit."

In the matter of crown pulleys, sand sheaves and wire line pulleys, its recommendations were made only after the following gentlemen, representing wire rope and kindred manufacturers, had been consulted: Geo. F. Bell, American Steel & Wire Co.; John K. Broderick, president, Broderick & Bascom, St. Louis, Mo.; Geo. R. Caldwell, A. Leschen & Sons Rope Co.; Samuel R. Dye, John A. Roebling Sons Co.; Frank Hinderliter, Hinderliter Tool Co., Tulsa, Okla.; James M. Murray, Cleveland, Ohio; C. L. Norton, Geo. C. Moon Co., Garwood, N. J.; C. A. Perryman, Wickwire Spencer Steel Corporation; W. H. Pitkin, Waterbury Co., New York; Walter Voightlander, sales engineer, Geo. C. Moon Co., Garwood, N. J.; Geo. S. Whyte, MacWhite Co., Kenosha, Wis.

Wire line manufacturers gave recommendations to the working committee, covering the proper diameter of pulleys and drums, and also the advantages to be gained by the use of harder pulley surfaces.

The working committee also secured the benefit of the counsel and advice of the following representatives of steel rig manufacturers: R. R. Bloss, International Derrick and Equipment Co.; Chas. L. Henry, Lee C. Moore Co., Inc.; Pittsburgh, Pa. and Tulsa, Okla.; Harbour Mitchell, general manager, Derrick Division, Jos. A. Thomas, assistant general manager, Kansas City, Mo., Superior Tube Co.

By referring to the dimension sheet you will note that your committee recommends three sizes of rig iron outfits only: 4½-in., 5-in., 6-in. Each outfit to carry crank shaft to carry full diameter mentioned.

Odd sizes have been entirely omitted, and it was the committee's recommendation that on the 5-in. size the light jack post boxes be eliminated and the heavy jack post boxes substituted, making a standardized outfit known as 5-in

The 6-inch rig iron outfit is adequate for all present purposes, and when this outfit shows signs of weakness resulting from deeper drilling it is recommended the quality of the product be improved instead of the dimensions being increased.

Committees Report on Standardization

Those on Cable Tools and Rig Irons Complete Work While Others Relate Progress That Has Been Made During Year

By Ralph T. Baker

One of the most important accomplishments of the American Petroleum Institute during the past year was brought out at the fourth annual meeting of the institute at St. Louis last week in the reports of committees on standardization of oil field equipment. After numerous meetings, lengthy discussions of engineering data and a weighing of all the features involved, the committee on the standardization of cable tools and rig irons made final reports and recommendations which formed the basis for resolutions requesting adoption of the provisions by the directors of the institute.

The report of the work done on the standardization of cable tools was given to the group meeting of the institute by Grant Hubley, of the Oil Well Supply Co., Pittsburgh, Pa., chairman of the committee, on Wednesday afternoon. The significance of the agreement of the oil men, manufacturers and engineers regarding these specifications is one of the outstanding developments in the industry. It is anticipated that a large amount of trouble in the field will be eliminated by the adoption of the standardization recommendations and the observance of the provisions. The group gave instant approval by voting a recommendation of the provisions embodied in the report to the directors.

The report of the committee on standardization of rig irons was submitted by H. J. Lockhart, of the Parkersburg Rig & Reel Co., Parkersburg, W. Va., and adoption of three sizes of irons, 4½, 5 and 6-inch was recommended. A resolution recommending the report to the directors of the institute was passed.

Engineer for Institute

It was significant to note that the suggestions by the two committees that the institute appoint an engineer to devote his entire time to the problems of standardization for the body was received with much favorable comment and was approved when brought before the group.

In the matter of future deeper drilling it was suggested by the committee that manufacturers improve the quality of the materials in rig irons in preference to enlarging the sizes.

The report of the committee on the standardization of rotary drilling equipment, presented by J. F. Lucey, of the Lucey Manufacturing Corp., Chattanooga, Tenn., was in the nature of a preliminary survey with several conclusions reached and reported. It was decided by the committee that the adoption of standard specifications for rotary tubular goods was a necessary preliminary to the final recommendations concerning rotary drilling equipment standards.

Prior to the committee reports a paper on the use of electricity in the oil fields, prepared by W. G. Taylor of the General Electric Co., Schenectady, N. Y., and read by B. M. Mills, of the same organization provoked a general discussion in which the gas engine manufacturers were given a chance to discuss some of the statements.

Nine recommendations were made by R. D. Gwynne, of the Gypsy Oil Co., Tulsa, chairman of the committee on standardization of belting, at the group session Wednesday morning. Considerable work had been done by this committee and plans were announced.

Regarding standardization of rotary tool joints S. A. Guiberson, Jr., Dallas, Texas, chairman, told of the efforts of his committee, which still has considerable work before a final report. Interesting accomplishments were reported, with the prediction that actual results and recommendations would be made soon.

The report of A. B. Steen, chairman of the committee on boiler code, was read by John T. Kirby of the Oil Well Supply Co., Pittsburgh, Pa. Exceptions to the A. S. M. E. code were reported and it was recommended the committee be continued.

Belt Standardization

The committee on belt standardization recommended:

(1) General oil field belt to be made of the highest grade cotton belt duck of the highest tensile strength as so recognized and used by the standard high grade belt manufacturers in their first quality oil field belt.

(2) Drilling belts to be equal to 12-inch 6-ply for common shallow work; for more severe work, getting into depths from 2,100 to 4,000 feet, belts to be equal to 7 and 8-ply and widths to be 12 and 14 inches. Length to be 90 to 110 feet, according to drilling conditions.

(3) Pumping belts to be 10 and 12-inch width; 5 and 6-ply for common or shallow work. This applies to beam or power belts. For more severe work to be 7 and 8-ply and widths 10-inch, 12-inch and 14-inch. This applies to both beams and power.

(4) We strongly recommend that engine builders increase the width of face of clutch pulleys to a minimum of 16 inches, and to build the clutch to minimize destruction to belts. Further that the minimum diameter of clutch pulleys be 18 inches and preferable 20 inches or more, to increase the life of the belting used. It would also be well if the band wheel be increased to 14-inch width and that band wheels be lagged with suitable material.

(5) Fasteners or clamps.

For drilling:

A. Modified form of present oil country clamp, belt side of clamp to be corrugated crosswise of the belt.

B. Belt edge of clamp to be bent at right angles and corners rounded. This would form an angle short leg of angle to conform to arc of belt.

For pumping (beam and power):

A. Welded malleable plate and bolt type or equal with nut suitable to standard wrenches. Instruction for application to be furnished by the operating department.

As an alternate we recommend for both pumping and drilling the use of the plate and bolt type of fasteners. All holes to be punched 1-16-inch smaller than bolt.

(6) The use of belt dressing on rubber belt is not necessary when belts are being operated correctly. We do know that belt dressing is being used in oil field operations and we therefore recommend when such is the case the use of vegetable castor oil applied very sparingly.

(7) All belts should be thoroughly protected from weather and other deteriorating condition.

(8) We recommend that large producing companies add to their engineering force a belt engineer, responsible for correct belt operations, also that the belt manufacturers exercise a similar engineering supervision and inspection in the fields.

(9) Belt stretchers to be used on all installations wherever possible.

The preceding is the result of the deliberation of your committee at their various meetings in July and December. It does not consider its work entirely completed but only so far as practicable to the present.

Our plans for the future are: The appointment of sub-committees to draw up tentative specifications and present them to the standardization committee for further deliberation and action. Other meetings will be held between now and the next annual meeting of the Institute at which we hope to present a supplementary report.

Rotary Equipment

The committee on rotary drilling equipment reached unanimous decision as to the following conclusions:

First: To carry out the recommendations of the district committees, to analyze reports and to recommend standards to the committee as a whole, the following committee was appointed: D. S. Faulkner, Union Tool Co.; E. Grieve, Oil Well Supply Co.; Hugh Harris, Lucey Manufacturing Corp.; Walter W. Fondren, V. P. Humble Oil Co.; W. W. Keck, Superior Oil Co., Los Angeles.

Second: Complete standardization of rotary drilling equipment cannot be carried out until the final adoption of the pipe standards. Standardization of rotary drilling equipment should not be delayed until the final adoption of pipe standards. Some standards should be put into effect based on the present equipment, as present pipe standards will be in effect for some time.

Third: It is absolutely necessary tool joints should be standardized as quickly as possible, and very little progress can be made in standardizing rotary equipment until tool joint standards are adopted.

Fourth: The rig and derrick will have to be standardized before the crown block and other important factors connected with installation of rotary machinery can be worked out.

Fifth: As many of the engineers and other members of our committee are also members of the Cable Tool Standardization Committee, we heartily endorse their report which applies to the recommendations to the A. P. I. as to method of control of threads. The recommendation as to the handling of gauges and templates is excellent. Similar recommendations will be made by our committee applied to threads on tool joints, drill collars and fish tail bits.

Sixth: The chairman appointed a research committee, realizing it might be helpful to the industry if a general clearing house of information could be established for reporting to each other the results of tests and experiments, it being distinctly understood that trade secrets, or information of particular value to individual manufacturing companies should not be made a subject of general discussion.

Rotary Tool Joints

The committee on rotary tool joints reported:

In the first place, the extreme depths of the wells now being drilled in California have completely revolutionized the rotary drilling equipment.

We now have a great many wells producing oil from over 5,000 feet in depth, and one drilling at over 7,000 feet. We are landing 3,800 feet to 4,000 feet of 11-inch casing and cementing water off with it at that depth. This casing is 8-thread casing, and no trouble is being experienced with any leaking of water through the coarse 8 threads. In one wall 5,283 feet of 8¼-inch casing was successfully landed. To drill the hole to such depths has called for the highest grade of steel and the most careful heat treating and tempering of the rotary tool joints, as well as the most expert workmanship. Some of the formations drilled through are extremely hard, requiring rock rotary bits and twist offs and fishing jobs are not by any means of rare occurrence.

These wells cost all the way from $100,000 to $200,000 and any defective material or faulty workmanship can result in complete loss. I thought there could be very little dispute over the hole through the tool joint. For three hours most of the debate was over the standardization of that hole. That hole regulates the thickness of the pin and establishes the strength of the tool joint. It must be large enough for a torpedo to pass through, and any deviation from the regular size can be extremely disastrous. The operator cannot very well measure the size of the hole through each tool joint, and must depend on the manufacturer to give him no smaller hole than the regular size adopted. The engineers want to make that hole as small as possible to get increased strength. Then the outside diameter of the joints seems quite simple. The engineer wants to increase the size for strength. The operator says the outside diameter must be uniform; and it cannot be over a certain size, which is less than the engineer recommends. The reason is this: In the case of a fishing job where a slip socket is run to catch the outside of the tool joint, if the diameter of the tool joint is larger than the regulation size, the socket will not take hold. If it is smaller it may take hold and then after lifting the lost drill stem several hundred feet let go and then more trouble when the drill stem drops to the bottom. But most important, sometimes an accident to the pumps or other equipment occurs and the circulation of mud is discontinued. The sand settles around the drill stem and freezes it tight. If there is room they wash down over it with a string of casing. To do this, if you are drilling inside another string of casing, it is necessary the outside diameter of the tool joints be enough smaller than the inside diameter of the wash string of casing to permit free passage between the collars and casing, and allow free flow of water and mud when circulation commences. Any other size in even one tool joint would make this impossible, consequently the operator again insists on an outside diameter smaller than the engineer wants. Until drill pipe threads for the new standards are established we can do nothing but conform to the drill pipe threads now in use, and those are mostly of one standard. The question of taper threads on the tool joints is one on which we are not yet ready to make recommendations. There are several types of threads in use, none with the entire approval of all engineers or operators.

Several new types of threads have been worked out and are to be tried. Some in use are covered by patents and their adoption would entail royalties if the patents are valid. Some may be held to infringe those in use, and litigation may have to ensue. The committee has decided the engineers will jointly work out a thread offering the greatest strength. This will then be put into use by some operator where a careful check will be made on its service and comparisons made with other types. By this method we will be able to select the type

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Group 3 Prices Continue to Advance

Gasoline and Fuel Oils Higher in Price. More Kerosene Available. Jobbers' Organization Unique Marginal Contract

By C. O. Willson

Largely the same market situation existed in Group 3 during the past week as obtained the previous three weeks. Gasoline prices again advanced from ¼ to ½ cent, resulting in many buyers and sellers being as far apart in their market opinions as they were a month ago when the Group 3 marketing area and the Mid-Continent first started its upward trend. With comparatively little fuel oil available, regardless of price, the general market on all grades advanced 5 cents. The kerosene movement was generally slow and prices were reduced where there were any changes. Natural gasolines for the first time in several weeks displayed a little strength and the absorption grades were slightly higher in price than they were a week ago. Other products generally followed the price trend of the major materials just enumerated.

Practically the same explanation will apply for these changes as were given last week and the week before. Gasoline prices are higher, not because of an exceptional movement, for buying outside the regular week to week purchases continued dull. But certain developments of general importance to the oil industry during the past week brought added confidence to the sellers that higher prices were justified and, in fact necessary, if a maximum profit from an improved situation were to be realized.

Crude Developments

The developments referred to applied to the crude market. Although they did not directly concern the refiners of Group 3, it was conceded that they did throw considerable light on crude price trends which sooner or later will be felt in Oklahoma and other fields of the Mid-Continent area. With the announcement last Thursday that The Texas Co. had advanced its prices on certain gravities, in line with those of the Humble Oil & Refining Co. on all schedules above 33 degrees gravity in the North Texas area, it was thought by many a general price advance in the Mid-Continent was assured at once. This feeling became stronger when before the week end the Magnolia Petroleum Co. adjusted its price schedules in the North Texas area so that on all gravities above 33 degrees they were in line with those of The Texas and Humble companies.

Considerable importance was also attached to the 25-cent advance in Pennsylvania crude. As the final development up to this writing the Champlin Refining Co. of Enid, Okla., on Monday offered an additional premium of 25 cents or a total of 50 cents for crude of 40 degrees gravity or better.

It is not surprising, in the light of these developments that refiners felt their prediction of an advancing market was further substantiated. Buyers who were willing to pay 6¾ cents for New Navy gasoline the latter part of the week found the bottom price 7 cents, and before the buyers could catch up with the advance the price was boosted to 7¼ cents. Very little material, if any, is available for spot shipment under the 7¼-cent quotation at this writing in Group 3, and future business is quoted at still higher prices. The same situation existed in regard to the higher and lower gravity gasolines and naphtha. Buyers seeking best grades of the latter product stated they could not secure more than one or two quotations in the entire Group, practically all material having apparently been withdrawn from the market. There are still buyers, both domestic and export, in the market for higher gravity gasolines but, due to the unexpected price situation during the past week, they were not conspicuous with their offers. Some will be pressed to make some purchases in the near future but they are holding off in the hope that there will be at least a temporary price depression in which they will be able to buy under present quotations.

Means Higher Prices

"When will there be a general advance in Mid-Continent crude," was the usual query when any attempt was made to discuss refined market conditions. The answer to this question unquestionably has great importance in refined markets, not only for the immediate future, but through the remainder of the winter. It is generally conceded that an advance in the crude price at this time would probably result in higher gasoline prices at the refinery with a possible advance in the Standard of Indiana tank wagon prices of special concern to the refiners of this Group 3, whose marginal contracts are at this time netting them under 5 cents.

The developments which would tend to indicate that a general advance in Mid-Continent crudes might materialize daily have been enumerated. There are those, however, who do not expect a general advance by the major purchasing companies until after the first of the year. Considerable importance is attached to the fact that the Prairie Oil & Gas Co., the Sinclair Crude Oil Purchasing Co. and several other buyers who follow the lead of these two major buyers have not yet met the schedules of the Humble, Texas and Magnolia Companies in the North Texas area. In this connection it will be recalled that for several months there has been little uniformity among the major buyers in their price schedules and amount of crude purchased. The Prairie and Sinclair have seemingly paid little attention to the buying policies of The Texas, Humble and Magnolia in the Mid-Continent fields. It is apparent that the interests of the large purchasers are not identical and that in the North Texas area several large purchasers can secure all the crude they want at this time without meeting the higher prices of other companies.

In Oklahoma and Kansas, the Prairie and Sinclair Companies are the most important buyers and until either one, or both, takes action the crude market structure will not be seriously affected. Although these companies have during the past two weeks increased their runs and have largely taken up the surplus crude it is also true that these two companies are not "scrambling" for crude as some reports would indicate. It is generally believed that the Sinclair's present total purchases are largely in excess of their requirements with comparatively little storage available to handle the surplus at points where it is needed. The Prairie's total purchases at this time can only be approximated but when it is considered that the company's deliveries in November were only 88,352 bbls. daily it is certain that the company is running large amounts to storage.

The independent refining industry generally does not want a crude advance at this time. The reason is obvious. If crude starts to advance the increased costs to the refiner will probably more than offset the advance in refined markets so that the refiner's position which has been precarious for months will continue unsatisfactory.

Certain students of conditions among the refiners having in mind the situation existing among the major buyers are inclined to criticize those of their number who are offering large premiums over the posted price at this time. They believe that if an advance is made these companies are alone responsible as the competition among the major buyers, both within and without the Mid-Continent area, has not reached the point where advancing prices are to be expected. Many refiners are hoping that any substantial advance in crude prices will be postponed until early in the spring when a seasonable demand will aid in maintaining a firm refined market which is apt to be flooded if crude advances at this time force a large storage program of crude and refined products on the part of independent refiners, together with a largely artificial price structure.

Gasolines and Naphthas

In addition to the spot situation in regard to gasolines and naphthas which has been explained, there has been considerable discussion during the past two weeks in regard to marginal contracts. Jobbers in the Standard of Indiana, Standard of Nebraska and Standard of Ohio marketing territories are seeking marginal contracts in large numbers due to the present comparatively narrow margin between the spot and tank wagon prices for gasoline. Some business is being placed from week to week but, generally speaking, the refiners are not anxious to enter into these contracts on the terms of previous years while the jobbers, due to the wide margin between the spot price of gasoline and tank wagon which prevailed up until a few weeks ago, are generally seeking even more attractive contracts than they have had in the past.

In this connection the action of the National Petroleum Marketers' Association in seeking to arrange these contracts with the association acting as an agent is interesting and is causing considerable comment among the refining industry of the Mid-Continent area. A representative of the association has been discussing the matter with refiners. So far as known little business, if any, has been placed. It is the plan of the association to handle these contracts as agent, ⅛ of a cent a gallon to be paid by the seller.

Aside from the question centering around the advisability of handling these contracts through a jobbers' association, the tentative contract under discussion has several features which are of general interest to all who contemplate entering into new agreements. It is generally agreed among both jobbers and refiners that contracts in the past have not been satisfactory due to the fact that compared to the spot prices, they were generally unfavorable to one or the other. It is often contended that a more flexible contract was needed which would do away with wide margin between the spot market and the marginal contract basis.

The proposed contract apparently has this need in mind. It provides that the margin in general shall not be less than 4 cents nor more than 5 cents, with a sliding scale covering sales between these margins. It provides that should the contract at any time invoice a price f. o. b. refinery, less than buyer's margin, then the seller may figure an invoice price per gallon that will exactly equal buyer's margin. In November it provided for a temporary margin of 3¼ cents effective until the advances in the broad general tank wagon markets of the Standard Oil Co. of Indiana territory amounted to ¾ cent per gallon or more, or until the spot price would yield the buyer a margin of 4½ cents. When this situation has developed the following price basis would be in effect: During whatever period the spot market would yield buyer a margin of 4¼ cents, the margin would be 4 cents with ¼ cent difference, continuing up to the 5-cent maximum. The contract further provides that the seller be given the opportunity to furnish the buyer any additional gasoline needed by the latter in excess of that covered in the marginal contract at the price it could be purchased from other refiners. Other provisions cover the settlement of price war situation on a basis in which the

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REFINED MARKET BAROMETER

Advances in Pennsylvania crude and the payment of higher prices by several companies in North Texas during the past week were generally interpreted in refined market circles throughout the United States as indicative of a general advance in the near future. Refiners, due to this belief, continued to advance their gasoline prices in some areas with many plants withdrawing entirely from the spot market in order to accumulate stocks in anticipation of an advancing market. Prices in some areas, however, were unchanged. Fuel oil demand generally strong with prices either firm or advancing. Kerosene weaker with no important general price changes. No general changes in other products.

Mid-Continent—Higher crude prices in one area and an expected general advance in others added strength to refined markets. Gasoline and blend prices advanced in several areas and firm in others. Practically no naphtha available for spot shipment. Fuel oil higher except in North Louisiana and Arkansas where prices are unchanged. Very little fuel oil available for spot shipment. More kerosene available but prices generally unchanged. Absorption grades of natural gasolines firmer with other grades still weak. Neutral market strong.

Atlantic Seaboard—General optimism apparent. Prices have not generally advanced but refiners are refusing to give the price concessions of the past. Good movement of gasoline for the season and higher prices are expected. Movement of lubricating oils fair with prices firm. Export market for gasoline and kerosene fairly active. Gain in the receipts of crude and refined products.

Pennsylvania—Crude advance did not prevent weakening in gasoline, fuel oil and kerosene market. Movement fair but prices on several products have been reduced. Good demand for neutrals and prices were advanced on a few grades. Strong demand for wax.

Chicago—Gasoline and fuel oil prices higher. Crude advance expected to result in further advances. Exceptionally heavy movement of gasolines for domestic consumption. Blends active. Kerosene holding its own. Distillates slow. Good demand for neutrals.

Gulf Coast—Demand for lubricants slump. Situation believed temporary and will not result in lower prices. Strong demand for fuel and gas oils and prices were advanced.

"Knock" in Motor, How It Is Caused And Its Prevention

By Thomas Midgley, Jr.
(Before the American Petroleum Institute, St. Louis, Mo.

When you mix an explosive mixture and compress it in the cylinder of the internal combustion engine and then light that with a spark, the mixture starts to burn and suppose this is the said cylinder head and here is a spark plug and this has an explosive mixture in it and we light that with a spark; the flame starts from there and travels across the cylinder head. It is upset a little bit by turbulence but that doesn't play any particular part in this discussion.

As long as that flame contents itself with traveling across there at a few meters a second everything is all right, but if you try to push this piston up a little farther to some point like that, it doesn't content itself with traveling across there at a velocity of a few meters a second, but it gets over here some place and it travels across there at a velocity of perhaps a mile a second or something like that, a regular speed, and it builds up just like pushing a snow plough along with a little bit of snow in front of it, it builds up a pressure wave that travels across with the flame at that velocity and the pressure in the front of that flame is very high, indeed, possibly four of five thousand pounds per square inch, which means that the gas in that little section is very highly compressed and traveling at that rate of speed when it hits the side of this cylinder head, it gives off the knock that you are all familiar with with a carbon motor or overheated motor or too great a spark advance or anything like that that gives you the knock or the "ping" that nobody likes.

If that were all that were involved we could leave this piston down here and that would not happen and we would not bother with these antiknock materials; but there are very great and distinct disadvantages in raising that piston and cutting down this combustion chamber, because as you raise the top of this piston and keep the fuel from knocking, the power output per explosion is increased with the result that you increase the amount of power you can get out of the motor and you increase your fuel economy at the same time, so that all of us should be very anxious to get these pistons farther up into the cylinder so that we can get more miles per gallon, which is in accordance with what you were advised yesterday is going to make your product more valuable; it will have a greater utility value when such a thing can be brought about.

I showed you last year that we can take a fuel that is knocking in a motor and add a small amount, less than .1 of one per cent by volume of an oil that looks just like the fuel itself, which is known as tetra ethyl lead to that fuel and then run the fuel into the motor and it doesn't knock any more.

That, in simple English, is the antiknock development. Since last year we have placed this on the market under the trade name of ethyl gas. It first went on the market about February first of last year in Dayton at one filling station and at the present time we are marketing just a little less than a million gallons of the ethylized gasoline per month in scattered stations. Wheeling, W. Va., is the Eastern point and we are out close to the Mississippi River at the Western point, largely running down the Ohio River valley.

OIL SCENE ON CALENDAR

How the "wildcat" obtained its name is indicated by a beautiful calendar for 1924 issued by the Oil Well Supply Co., which shows a lone drilling well in a section barren of any other evidence of civilization. The coloring of the calendar is especially good.

IMPORTS OF PETROLEUM RECORD SLIGHT INCREASE OVER OCTOBER

Imports of crude and refined oils at the principal ports for the month of November totaled 7,072,000 barrels, a daily average of 235,733 barrels, compared with 7,419,000 barrels, a daily average of 239,323 barrels for the month of October. Imports at the principal United States ports for the week ended December 8, totaled 2,424,000 barreis, a daily average of 346,286 barrels, compared with 1,585,000 barrels, a daily average of 226,429 barrels for the week ended December 1.

At Atlantic Coast Ports:	November	October	Wk. End. Dec. 8
Baltimore	288,000	365,000	103,000
Boston	467,000	352,000	210,000
New York	1,160,000	1,730,000	620,000
Philadelphia	525,000	647,000	57,000
Others	836,000	703,000	253,000
Total	3,276,000	3,797,000	1,143,000
Daily average	109,200	122,484	163,286
At Gulf Coast Ports:			
Galveston district	1,481,000	1,215,000	516,000
New Orleans and Baton Rouge	1,540,000	1,670,000	400,000
Port Arthur and Sabine district	632,000	687,000	305,000
Tampa	143,000	50,000	60,000
Total	3,796,000	3,622,000	1,281,000
Daily average	126,533	116,839	183,000
At All U. S. Ports:			
Total	7,072,000	7,419,000	2,424,000
Daily average	235,733	239,323	346,286

Receipts of California crude and refined oils at the principal Atlantic and Gulf Coast ports for the month of November totaled 5,543,000 barrels, a daily average of 184,766 barrels, compared with 5,920,000 barrels, a daily average of 190,968 barrels for the month of October. Receipts at Atlantic and Gulf Coast ports for the week ended December 8, totaled 1,142,000 barrels, a daily average of 163,143 barrels, against 1,161,000 barrels, a daily average of 165,857 barrels for the week ended December 1.

At Atlantic Coast Ports:	November	October	Wk. End. Dec. 8
Baltimore	586,000	857,000	.....
Boston	155,000	224,000	67,000
New York	2,825,000	2,586,000	672,000
Philadelphia	672,000	852,000	80,000
Others	365,000	425,000	78,000
Total	4,603,000	4,944,000	897,000
Daily average	153,433	159,484	128,143
At Gulf Coast Ports:			
New Orleans and Baton Rouge	940,000	976,000	245,000
Daily average	31,333	31,484	35,000
Total Atlantic and Gulf:			
Coast Ports	5,543,000	5,920,000	1,142,000
Daily average	184,766	190,968	163,143

15,894,250 Barrels of Oil Output of Texas Month of November

The production of the Powell, Texas Field for November was 8,278,800 bbls. or an average of 275,960 bbls. daily. A total of 543 wells were included in the compilation of production figures.

The production of the field since its beginning until the end of November was as follows:

January to and including June...	510,000
July	2,114,460
August	3,848,893
September	5,277,255
October	7,678,700
November	8,278,800
Total	27,708,108

The Mexia Field in November produced a total of 1,247,670 bbls. or an average of 41,589 bbls. a day from 531 wells. The Currie Field produced 95,220 bbls. from 70 wells or an average of 3,174 bbls. a day.

The total production of the East Central Texas division in November was 9,621,690 bbls., an average of 320,723 bbls. per day.

The North Central Texas fields produced 3,553,860 bbls., or an average of 118,462 bbls. a day.

The total production of all the fields in the North and East Central Texas territory for November was 13,175,550 bbls. an average of 439,185 bbls. per day.

The production of the Texas Coastal fields for November was 2,718,770 bbls.

The total gross production of all fields in Texas in November was 15,894,250 bbls. or an average of 529,808 bbls. per day.

ADVANCE CONTINUES IN GROUP 3 PRICES

(Continued from Page 22)

buyer and seller share alike in the loss. Disagreements are handled by an arbitration board of three members.

The price arrangement of the contract is somewhat unique and obviously is a step in the right direction in the opinion of the refiners and jobbers who have been seeking a flexible contract which would do away with excessive profits or losses for the two parties concerned.

There is some material available in the south Oklahoma area at prices from 5 to 7½ cents under the prices quoted for the bulk of the Oklahoma output. This material does not come up to the specifications of many of the buyers. Gas oil is slightly stronger in price.

The provision covering spot purchases outside the contract on the part of the jobber is already in effect in many contracts and is generally approved.

Kerosene and Distillate

Kerosene stocks in the Mid-Continent Field have been increasing for several weeks as shown by the weekly report of the Western Petroleum Refiners' Association. Although several of the larger refiners are not giving any price concessions other concerns are and the better grades are available from ⅛ to ¼ cent under last week. So far as known, there were no large export purchases in this group during the past week. It is understood that at least one large buyer will be in the market again provided the expected lower prices materialize.

The distillate situation is unchanged. Weather conditions are generally unfavorable for a maximum consumption but the movement is nevertheless sufficient to prevent distress material being offered.

WILDCAT INCREASES FLOW

The Cowley County wildcat, owned by the Waite Phillips Co. and J. D. Hill was deepened about 3 feet Monday afternoon with a resulting increase in production from 150 bbls. to about 300 bbls. daily. It is now about 9 feet in the sand topped at 3,199 feet. It is located in the NW cor. SE, Section 20-33-3e.

The Valerious Oil Co.'s Russell County wildcat swabbed 180 bbls. Monday and will be swabbed every other day until after the holidays.

PRAIRIE OIL & GAS ELECTION

At the annual meeting of the Prairie Oil & Gas Co. at Independence, Kans., the directors and officers were re-elected: Nelson K. Moody, president; W. S. Fitzpatrick, chairman of the board, and Dana H. Kelsey, vice president and general manager.

United States Has One-Half of Tanker Tonnage of World

By J. C. Rohlfs
Manager, Marine Department, Standard Oil Co. of California
(Presented at Group Session on The Transportation of Oil, Fourth Annual Meeting, American Petroleum Institute.)

The world's ocean tanker tonnage as of November 1, 1923, was approximately 8,000,000 deadweight tons, which if it may be called one ship, would require a cargo of approximately 48,000,000 bbls. of oil. The American tanker tonnage as of the same date was approximately 4,000,000 deadweight tons, which again, if it may be called one ship, would require a cargo of approximately 24,000,000 bbls. American oil companies therefore own about one-half of the tanker tonnage of the world, and the American tanker tonnage comprises over one-third of the total sea-going tonnage of the United States.

After the signing of the Armistice, the American oil companies and the United States Government through its shipping board found themselves oversupplied with tanker tonnage, and much of the American tanker fleet was laid up.

Suddenly the American Atlantic oil industry, which had been somewhat dependent on a Mexican crude and fuel oil supply, found itself face to face with a shortage, due to the rapid decline of Mexican production. California stepped into the breach and quickly reached a production on August 18, 1923 of 872,000 bbls. per day. It was found that the large American tanker made it possible to transport crude from California to the Atlantic seaboard (a round distance of approximately 10,000 miles) at a moderate cost.

The idle tanker fleet immediately found employment until, at the end of November, 1923, there were approximately 94 large tankers in the Coast to Coast trade, with a deadweight of approximately 1,100,000 tons, or a little more than 25 per cent of the entire American tanker storage. The lifting capacity of this fleet is between 180,000 and 200,000 bbls. of California oil per day, the round voyage ranging from 40 to 45 days. To complete a round voyage in this short time necessities very quick dispatch. It required four or five days to load the first Pacific Coast tanker, the "George Loomis." Today tankers are loaded in San Pedro, the oil port of Southern California, in from 6½ to 10½ hours, the first for a 10,000-ton tanker and the second for a 21,000-ton tanker. They are discharged on the Atlantic seaboard in from 12 to 24 hours, certainly a remerkable improvement in the loading and discharge of bulk oil ships.

Recent experiments with concrete tankers, several of which were cast for the United States Shipping Board, have not proven entirely satisfactory, although perhaps sufficient time for a fair trial has not been accorded them.

Further progress has been made toward economy in the American owned tanker by the introduction of the internal combustion engine (commonly known as the Diesel engine), into the cylinders of which the fuel oil is injected directly for the generation of power rather than into boiler furnaces.

As advantageous as direct Diesel propulsion is, there is perhaps still more improvement in sight, namely, the Diesel electric drive. The Standard Oil Co. of California has designed and has in operation the first all-American-built Diesel cylindes of which the fuel oil is injected Service."

The tank ship would have a life of from 20 to 25 years, and that oil corporation with the best ships and most efficient Marine department will transport a barrel of oil cheapest.

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MEMBER AUDIT BUREAU OF CIRCULATION

A GOOD EXAMPLE

In no other industry are prompt and reliable statistics so material as in the oil business. The rapid and unforeseeable fluctuations in supply prevent calculations for any period ahead with any certainty. The best that can be done is to keep instant watch upon stocks and developments which can be accomplished only through statistics covering the present activities of the industry. In most other lines statistics are merely records of achievements, but in the petroleum industry they are an essential barometer of conditions.

This was forcibly brought home during the present year. Had the statistics of the industry been studied as they have been since the storm from California and Powell overwhelmed the oil world measures could have been taken to shorten sail and ride out the gale. Instead, many were caught with all sails set and driven perilously near the rocks.

At many meetings during the depression stress was put upon the importance of securing such reports as fully and as quickly as possible. The figures collected by governmental bureaus are notoriously late, so much so as to be deprived of most of their value. The refining branch has long been anxious to obtain reports as prompt and complete as those furnished for production in The Oil and Gas Journal. To this end this publication has endeavored to supplement and anticipate the official figures by special checks, graphs and charts compiled for The Oil and Gas Journal, and has welcomed assistance from the refiners, notably the steps recently taken by the Western Petroleum Refiners' Association for the collection of weekly reports of runs within its jurisdiction. These reports, assembled by Statistician H. K. Davis, through the cooperation of the members, have been published each week in this journal and will hereafter appear in each issue on the Tank Wagon page.

The thanks of the industry are due to the Western Refiners' Association for this practical example. The association's reports supply weekly facts not available by government reports for a month later. Since these figures are of immediate practical value to the refining industry, a general effort along the same line would be of inestimable benefit.

WAS THE INSTITUTE WORTH WHILE?

The addresses delivered before the fourth annual meeting of the American Petroleum Institute at St. Louis showed a very clear appreciation of the problems before the industry but indicated no particular method for attempting their solution.

Yet the meeting, the largest ever held, was also the most successful because of the spirit developed and the interest shown. Oil men who attended the sessions and those who read the speeches in last week's or this week's issue of The Oil and Gas Journal will have a broader conception of the situation and be more amenable to the influences which make for cooperation and solidarity in the industry.

The Oil and Gas Journal notes with pleasure that many of the suggestions offered in these columns were touched upon by speakers at the convention, evidence that the opinions expressed here from week to week, have reflected, as they are intended to do, the thought of the thinking men in the industry.

While the meeting freely acknowledged the need for an active and continuous leadership it seemed to be felt that, in view of the agitation regarding the industry, formal action might be misconstrued or misrepresented to the public. The fact remains that the feeling of common interest promoted by the sessions will, in all probability, do more to promote mutual understanding and assure unity of purpose than the selection of a committee unsupported by such harmony within the industry.

The prime need was to arouse the various factors in the business to the sense of common danger in a divided house. That has been accomplished as evidenced by the tenor of the speeches delivered. Possibly the sudden transition from beneath the cloud of overproduction to the sunshine of promise in 1924 may have dazzled the eye for the moment and minimized the difficulties from which we are emerging but mature reflection will show that the fundamental issues before the industry remain to be dealt with. For one thing, the very rebound from bankrupt prices, carrying with it the necessity of readjusting the cost to consumers, will be used to poison the popular mind anew against the industry unless, indeed, the oil business sets its case clearly before the people and puts its house in order. It was interesting in this connection to hear the representative of the automotive industry at the Institute's banquet advise oil men to the very course suggested in these columns of using the contact with the public offered by the filling stations to place the evidence in the hands of its customers. Very practical, too, was his warning against mere assertion of self-righteousness; what the public needs is proof.

Despite the prospect of diminishing stocks it was well that the attention of the industry was centered on the possibilities of oil for house heating, the surest guarantee against repetition of the demoralization of a glut in production. The addresses of the automotive representatives, as well as of the oil burner men, the shipping and railroad representatives, made a deep impression as showing marketing prospects too little considered by the oil industry.

Any assumption that we have perfected our products and that the ratio of consumption and prices will remain relatively as they have been takes a near sighted view of the future. We have too easily forgotten how gasoline, "the stone rejected by the builder" has become "the chief cornerstone." Who knows what effect the development in the automotive industry and the oil burning industries may have upon the demand for petroleum products? More mileage, promised by the motor men, might greatly affect the market for gasoline. Newer engines using different petroleum products might do the same. The time may come when the heavier fractions will be more used. The possibilities are of immense interest to the refining branch and only less so to all other oil factors.

After all, we may be only at the threshold of oil utilization. Those who have pondered upon the marvelous development of the use of petroleum products in the past score years can best appreciate that progress and will be the last to set an arbitrary limit to conditions as they are. No individual or industry should be so engrossed with the routine tasks of today as to be unable to think of the possibilities of tomorrow.

It was precisely that sort of inspiration that was desired for the St. Louis meeting and many of the speakers showed they had caught the vision. Satisfaction, universally expressed, that the coming year holds the promise of prosperity should be accompanied by a wide awake alertness to the opportunity and responsibility that new and increasing demands will make upon the enterprise and ability of those within the industry.

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Oil Securities Respond to Good News

Advance in Pennsylvania Crude, Bedford's Speech at St. Louis and Slump in Production Encourage Market for Shares

By N. O. Fanning
Room 525 No. 30 Church St., New York

NEW YORK, Dec. 17.—Oil securities responded to the first bit of good news the oil industry has had for some months—an advance in crude oil prices—by advancing briskly during the past week. Chief attention was paid to the issues of the oil producing and purchasing companies, such as Prairie Oil & Gas, Ohio Oil, Houston Oil and Middle States Oil. However, the strength in oil shares was not restricted to any one group. The Standard and independent refining group were also well bought at higher levels.

Provided crude oil prices advance there should be a very strong market for oil securities for at least a month or two. An advance in prices before the close of 1923 would probably result in the oil companies which have accumulated large stocks of crude at low prices, or at only the cost of production, showing favorable earnings for the current year. The financial reports will not be issued before February or March, but it is probable that oil stocks will discount the showing to be made by them in advance—that is on the current upward movement—provided, of course, there is a favorable showing.

It has not been generally expected in the trade that advances would take place before next year, and that, as a result, oil companies would have to make big reductions for depreciation of inventories on their 1923 reports. It was expected that 1924 would be the big year of improvement. The rapid decline in Powell production, however, is a factor which has upset all calculations. This field has fallen off so rapidly that an apparently fairly large supply has diminished almost over night to a bare necessity, and the big producers in that field will probably have to offset this loss by purchase elsewhere, inasmuch as it is considered too late in the season to do much wildcatting.

Bedford's Address Bullish

A. C. Bedford, chairman of the board of the Standard Oil Co. of New Jersey, in his address at the annual dinner of the American Petroleum Institute at St. Louis, made two points which are construed as bullish on the oil situation. In the first place, he said gasoline prices are too low. This is taken to mean that gasoline prices will advance, and the upward turn in the crude oil market makes an upturn doubly sure. In the second place, Mr. Bedford stressed the point that the Standard Oil Companies are operating "strictly on their own."

With all physical developments in oil pointing toward improvement from now on, there will doubtless be a favorable period in the oil business for the first half of 1924.

The Oil and Gas Journal's Averages

On Tuesday last, The Oil and Gas Journal's average price of 20 representative oil stocks listed on the New York Stock exchange reached a new high on the upward movement of 49.27. This was prior to the beginning of the upturn in crude oil prices, and substantial gains have been made since then, bringing the average well above 50 for the first time since it went below that figure last June.

Crude Advance Reflected

New high prices were recorded on the upturn in oil securities when the advances in the price of Pennsylvania crude were announced. Standard Oil of California reached 58¼, Middle States Oil got above 6, California Petroleum above 25, and South Penn Oil reached 137. These prices represented gains of one to nearly 10 points in a day.

The strength and activity in the stocks of the California oil companies leads to the belief that there will be an advance in prices in that field within a short time. Pacific Oil stock reached 44⅞, while Associated Oil advanced to 28½. California Petroleum was active and Shell Union Oil shared in the advance in prices touching 16.

Houston Oil, which has been steadily bought for the past week, was also a feature, advancing to 66½. On the curb, the Standard Oil issues as a group were well taken, although such issues as Prairie Oil & Gas, South Penn Oil and Ohio Oil featured.

Sinclair stock was active and higher, selling well above 25 for the first time in many months.

Caution Necessary

Inasmuch as sentiment toward the oil outlook and oil stocks has become so favorable, there will probably be a renewal of speculating, and it would not be surprising if new companies should spring into existence, to pass out later as quickly as they came. This is the usual occurrence when there is an oil "boom." Therefore, it is time to urge the greatest caution in the purchase of oil stocks. Those companies which have been able to weather the storm of the last few months and are now in a good financial position, will unquestionably benefit most from the improvement in oil conditions. Particularly favorable should be the position of the concerns which have been able to accumulate a good supply of crude oil at the recent low prices or at only the cost of production. The more caution is employed the less speculative is the oil industry likely to be called.

To Take Over Minority Stock

Minority stock holdings of the Marland Oil Co. of Mexico will be taken over on the basis of eight shares for one share of Marland Oil Co. stock. The recent offering of 247,823 shares of Marland Oil stock was not fully subscribed for, according to a statement filed with the Stock Exchange. Of the total offering, only 10,267 shares were subscribed for at $40 a share, while 79,788 shares were reserved for issue to holders of part paid receipts under payment of $3 a share due upon subscribed for stock.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

No.	Stock	Par	§Dividend Rate	Closing Quotations Dec. 18	Dec. 11	Range 1923 High	Low
1.	Associated Oil	25	6	28	26½	29⅛	24⅞
2.	Atlantic Refining, common	100	4	126	120	160	98¾
3.	Barnsdall "A"	25	..	15½	15¼	35	9⅞
4.	Caddo Central Oil	..	..	2½	2⅜	9⅛	1½
5.	California Petroleum, common	25	7	25	24¼	29⅛	17⅛
6.	Cosden & Co., common	..	..	24⅞	33¼	62¼	22¾
7.	General American Tank	..	†3	44½	*45	71⅞	40
8.	General Asphalt	100	..	35¾	34	54	23
9.	Houston Oil	100	..	67⅞	60¼	78	40¾
10.	Independent Oil & Gas	10	..	6	6¼	11¼	3⅜
11.	Indiahoma Refining	25	..	*2	2¼	9	1¼
12.	Indian Refining	10	..	4	4	8½	4
13.	Invincible Oil	50	..	14	10⅞	19¼	7⅛
14.	Marscalbo	..	..	25	26	27¼	16
15.	Marland Oil	..	..	35⅞	34⅝	59⅝	18½
16.	Mexican Seaboard	..	..	15¾	12⅜	19¾	5⅝
17.	Middle States Oil	10	..	7½	5¼	12¼	4⅝
18.	National Supply	50	6	65½	67¼	68	54
19.	Pacific Oil	..	†2	46¾	43¼	48⅞	31½
20.	Pan-American, common	50	16	62¼	61¼	93½	53
21.	Panhandle Prod. & Ref.	..	..	*2	*2	6¼	1¼
22.	Phillips Petroleum	..	†2	32½	33	69⅝	19¾
23.	Pierce Oil, common	25	..	2¼	2¼	6	1½
24.	Producers & Refiners	50	..	29⅝	26	58¼	17½
25.	Pure Oil Co., common	25	6	20¾	18⅜	32	16¼
26.	Royal Dutch, N. Y., sh.	13.40	2.62	48¾	50	55⅛	40½
27.	Shell Transport	10	x92½	*33	*33½	41¼	29½
28.	Shell Union, common	..	†1	15¾	15⅜	19¼	12⅜
29.	Simms Pet.	10	..	10⅞	11⅝	16⅜	6½
30.	Sinclair Consolidated, common	..	†2	25½	23¼	39⅜	16
31.	Skelly Oil	25	..	23¼	22⅞	35	12½
32.	Standard of California	25	8	60	56⅝	64½	47½
33.	Standard Oil of N. J.	25	4	36⅝	35½	44¼	30⅞
34.	Standard of New Jersey, pfd.	100	7	117	116¾	118¼	114¾
35.	Superior Oil	..	..	2½	2⅜	6⅜	2
36.	The Texas Co.	25	12	42½	40⅞	52⅞	34⅝
37.	Texas & Pacific Coal & Oil	10	..	11	9	24⅜	5½
38.	Tide Water Oil	100	4	116½	113	144	94
39.	Transcontinental	..	..	3½	2⅝	14½	1¼
40.	Union Tank, preferred	100	7	*106½	*107	114	106
41.	White Eagle Oil & Ref.	..	2¼	24¾	24½	30⅜	20⅛
	Standard Oil Stocks						
42.	Anglo-American Oil	5	15	15⅝	14⅞	19¾	13⅜
43.	Borne Scrymser	100	12	*145	*145	153	110
44.	Buckeye Pipe Line	50	14	70	73	94	69
45.	Chesebrough Mfng., com.	100	14	*225	*230	340	205
46.	Continental Oil	25	8	43¼	*42¼	50	32½
47.	Crescent Pipe Line	25	..	*14	*14½	25	15
48.	Cumberland Pipe Line	100	10	*104	105½	117	80
49.	Eureka Pipe Line	100	8	*95	*98	117¼	87
50.	Galena-Signal, common	100	4	67½	68½	78	55
51.	Humble Oil & Ref.	25	4.8	36⅝	36¼	41	28¼
52.	Illinois Pipe Line	100	16	137	*135	171	115
53.	Imperial Oil, Ltd.	25	16	107½	106	123	92
54.	Indiana Pipe Line	50	16	85	*84	103	81
55.	Intl. Pet. Co.	..	x50	16½	16¾	24¾	13¼
56.	Magnolia Pet.	100	4.5	145	138½	166	123
57.	National Transit	12.50	16	*21	*22⅝	29	19½
58.	New York Transit	100	10	76	77¼	138	70
59.	Northern Pipe Line	100	25	*93	96½	111	96
60.	Ohio Oil Co.	25	4	68¾	66½	85⅝	48¾
61.	Penn-Mex Fuel	25	..	42	*21	45	10½
62.	Prairie Oil & Gas	100	8	225½	220	272	152
63.	Prairie Pipe Line	100	8	103	98½	117	93
64.	Solar Refining Co.	100	15	170	*165	212	161
65.	Southern Pipe Line	100	16	*91	*91	116	87
66.	South Penn Oil	100	..	143	123	196	100
67.	South West Pa. Line	100	8	*77	*75	89	66
68.	Standard of Indiana	25	10	63½	59	69⅞	49¼
69.	Standard of Kansas	25	8	41½	40	56¼	36½
70.	Standard of Kentucky	25	16	107	99½	109½	76
71.	Standard of Nebraska	100	20	230	220	280	186
72.	Standard Oil of N. Y.	25	5.6	43	41½	49⅝	35½
73.	Standard of Ohio, common	100	10	283	280	317	270
74.	Swan & Finch	100	..	35	35	38	21½
75.	Vacuum Oil	25	10	53⅞	52⅝	55½	40
76.	Washington Oil	10	..	*23	*22⅝	28	20¼
	Miscellaneous Stocks						
77.	Cities Service, banker's shares	..	‡21	15	*13½	18½	12¾
78.	Gulf Oil Corp. of Pa.	25	6	59¾	58	68¼	45¾

*Bid, no sales. †In dollars. ‡6 per cent in cash and 15 per cent stock dividend declared; now being paid in scrip. §The figures carried in this column are kept up-to-date as far as possible but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange weekly was as follows:

Dec. 18	51.20	Nov. 5	42.60	Sept. 25	42.48
Dec. 11	49.27	Oct. 30	41.66	Sept. 18	41.43
Dec. 4	48.66	Oct. 23	42.42	Sept. 11	44.78
Nov. 27	47.74	Oct. 16	42.80	Sept. 4	44.06
Nov. 20	45.26	Oct. 9	43.29	Aug. 28	44.13
Nov. 13	43.84	Oct. 2	43.53	Aug. 14	43.39

NEBRASKA OIL MEN IN SESSION AT OMAHA

OMAHA, Neb. Dec. 18.—The Nebraska Independent Oil Men's Association held a one-day convention in Omaha with 80 members in attendance. The members spent the day in a real discussion of matters pertaining to the oil trade. Among the speakers were L. V. Nicholas of Chicago, president of the National Independent Oil Men's Association, and Lew Allen of the Empire Refining Co., Kansas City. The old officers of the association were re-elected as follows: L. L. Coryell, Lincoln, president; G. A. Steele, Manhattan Oil Co., Omaha, vice president, and Charles M. Sutherland, Omaha, secretary-treasurer.

L. V. Nicholas, in his address, said in part: "The great need of the independent oil men is industrial recognition of the rights of others. More friendly cooperation and less stepping on the corns of our associates is the relationship I hope to see established. We cannot benefit from these factional fights and neither can the public. The price structure was wrong several months ago but it is right at this time and we should try to keep it there."

Several hours were taken up in three-minute discussions of a prepared list of 20 questions of importance to the oil trade.

Lew Allen, in his speech, represented Henry L. Doherty of New York in his nation wide campaign to interest the oil trade in increased use of fuel oil.

A resolution was adopted endorsing the national advertising plan of the National Petroleum Marketers' Association.

PENN MEX GETS GUSHER

PITTSBURGH, Pa., Dec. 18.—A telegram from Tampico, Mex., to the home office here reports the Penn Mex Fuel Co.'s No. 22 on the Alamo tract has been completed and is flowing 40,000 bbls. daily of light oil.

DEATH OF R. D. MEAD

R. D. Mead, aged 62 years, who had been connected with the oil industry since he was 15 years old, died last Thursday at his home at Mannington, W. Va. Mr. Mead was well known in the oil business and had many friends in the oil fields of Texas and Oklahoma.

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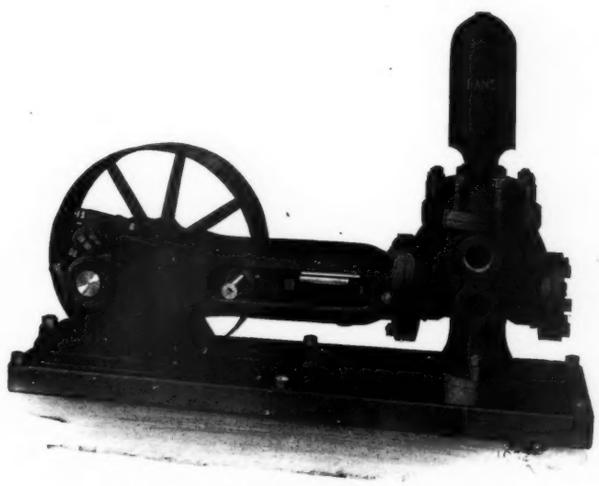

Fig. 1032

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Discovery Clause Benefit in Income Tax

Clear Understanding Necessary to Secure Advantage of Provision in Making Returns to Government

By Robert Wesley Brown
Petroleum Engineer and Geologist, 225 Ardis Building, Shreveport, La.

Before long taxpayers will be computing their income tax. Companies organized within the year must decide whether to charge drilling expenditures to capital or to expense and this decision will govern future returns. The 1918 taxes will be outlawed next March. A clear understanding of the discovery clauses, first incorporated under this law, is essential to the taxpayer who failed to take advantage of these clauses and to the taxpayer who took advantage of these clauses but failed to substantiate his claims. A taxpayer may now amend his 1918 tax return to take advantage of the discovery clauses but the time is limited. Many additional assessments undoubtedly will be made because taxpayers failed to substantiate their claims.

Engineering Features

Certain features of the law are of an engineering character and those related to depletion deductions and valuations, including discovery valuations, are of great significance. They have required a special engineering section (the oil and gas valuation section of the income tax unit) composed of men of technical training and wide practical experience. These engineers review all income tax returns pertaining to oil and gas properties and recommend valuations and depletion deductions.

It is difficult to estimate the tax reduction effected through engineering work. A tax reduction of one-half in the majority of cases is a conservative estimate. In many instances proper valuations have resulted in the elimination of all taxes.

Valuations may be permitted or required to determine:

1. Invested capital.
2. Profit or loss from the sale of capital assets.
3. Depletion deductions.

Valuations of the following dates are commonly involved:

1. March 1, 1913.
2. At date of incorporation of a company, if the assets were acquired in exchange for stock.
3. At date of inheritance, if secured through inheritance.
4. Within 30 days of discovery, if discovery can be substantiated.
5. In some other special cases.

Valuations are most commonly required in cases of discovery. The discovery clause permits the use of the value within 30 days of discovery as a basis of determining depletion provided these conditions are satisfied: "(1) that the fair market value of such property (oil and gas wells) on the date of discovery or within 30 days thereafter becomes materially disproportionate to the cost, by virtue of the discovery, and (2) that such oil and gas wells were not acquired as the result of purchase of a proven tract or lease," (3) that the discovery was made after March 1, 1913.

Regulations Explained

The regulations further state that "a proven area . . . shall be presumed to be that portion of the productive sand or zone or reservoir included in a square area of 160 acres having as its center the mouth of a well producing oil or gas in commercial quantities." The sides of the square are north-south and east-west lines. The result is most owners are entitled to discovery valuations.

Much confusion has arisen concerning the legal definition of a discovery well. The interpretation of many taxpayers is that a well must be drilled on their tract prior to the drilling of one by their neighbor before they are entitled to discovery valuations. This is not necessarily true. The significant dates are (1) the date the taxpayer acquired his property—not the date the first well was drilled on his tract and (2) the date that the surrounding wells were completed. The taxpayer ordinarily need only to have acquired his property before the surrounding wells were completed (assuming the value of the tract to have become disproportionate to cost and the first well to have been drilled after March 1, 1913). The legal definition of a discovery well for taxation purposes should not be confused with the common definition which gives only one discovery well to a field. The Busey well is commonly called the discovery well of the El Dorado Field, Arkansas. But for taxation purposes hundreds of discovery wells exist in this field.

	Drilling charged to expense, 1923		Drilling charged to capital, 1923	
Gross income:		$800,000		$800,000
Less deductions				
Development expense	$605,000			
Operating expense	200,000	805,000	$200,000	
Depletion of development expense			220,000	
Depletion on discovery value	$300,000		300,000	720,000
Net taxable income (or deductible loss)		*$ 5,000		$ 80,000
Gross income, 1924—		800,000		800,000
Less deductions				
Operating expense	160,000		160,000	
Depletion of development expense			220,000	
Depletion on discovery value	300,000	460,000	300,000	680,000
Net taxable income		$340,000		$120,000
Gross income, 1925—		400,000		400,000
Less deductions				
Operating expense	70,000		70,000	
Depletion of development expense			110,000	
Depletion on discovery value	150,000	220,000	150,000	330,000
Net taxable income		$180,000		$ 70,000
Goss income, 1926—		200,000		200,000
Less deductions				
Operating expense	40,000		40,000	
Depletion of development expense			55,000	
Depletion on discovery value	75,000	115,000	75,000	170,000
Net taxable income		85,000		30,000
Net taxable income during life of property		600,000		300,000
Taxable income without deduction for depletion				1,125,000

*Loss.

Erroneous Interpretation

An erroneous interpretation is frequently placed upon the clause "the depletion allowance shall be based upon the fair market value of the property at the date of discovery, or within 30 days thereafter." This clause is frequently interpreted to mean that the actual work of valuation must be performed within 30 days of discovery, which is not the case. The work of valuation is commonly performed several years after the discovery.

Oil companies and oil operators are given the option of deducting cost of drilling and other development costs (except cost of the land) as an expense in the year in which incurred or of charging them to capital, thus becoming the basis for depletion deductions. But "election once made under this option is final and will control the returns for all subsequent years." Operators usually charge drilling to expense which results in lower taxes the first year. By this policy the taxpayer loses part of the depletion deductions based upon discovery valuations and his total taxes are greater.

Assume that a property was developed in 1923 at a cost of $605,000 and that there is an appreciation of $825,000 in value due to "discovery." The gross income in 1923 was $800,000 and the operating expense $200,000. The estimated gross income and operating expense for the next three years is given below:

Year	Gross Income	Operating Expense
1924	$800,000	$160,000
1925	400,000	70,000
1926	200,000	40,000

Net Taxable Income

The following calculations show the net taxable income, both when drilling is charged to capital and when charged to expense.

Mistake to Avoid

In this example, if the taxpayer charges drilling to expense, he will not be required to pay taxes the first year. But this is more than offset by greater taxes later. If drilling is charged to expense, there is a loss of $5,000 the first year which may be deducted from the next year. But the taxpayer loses the benefit of $300,000 depletion based on discovery value as no loss resulting from depletion based on discovery value can be subtracted from the next year. For four years, the total taxable income under this policy is $600,000. If drilling is charged to capital, there is a taxable income of $80,000 the first year, but the total taxable income for four years is only $300,000 or one-half what would have been taxable if drilling had been charged to expense. The taxable income without benefit of discovery valuation is $1,125,000. From this example it is evident a great advantage is gained through depletion deductions based upon discovery value, but a great part of this benefit may be lost through charging drilling to expense.

To take advantage of discovery valuations, or of depletion deductions based upon valuations as of other dates, three steps are commonly involved: (1) valuation of the oil property, (2) estimation of the oil reserves, and (3) calculation of depletion.

There are several methods of valuations, the most common being the present value method. This consists in estimating probable recoverable oil or gas reserves, probable gross income, probable total expenditures and from these factors the probable net income throughout the life of the property which must be discounted at some assumed rate of discount to determine the present value.

Several methods are involved in estimating the total recoverable reserves by production decline curves are most commonly employed.

After value and recoverable reserves are established, the depletion unit is determined by dividing the value by recoverable reserves. The depletion for given period is determined by multiplying the production of the period by the depletion unit.*

*For more complete information concerning the factors of valuation, the reader is referred to the series of articles on the subject by the writer, which appeared in The Oil & Gas Journal beginning June 1, 1923.

HUMBLE CO. UPHELD IN TEXAS TRUST SUIT

AUSTIN, Tex., Dec. 18.—Right of the Humble Oil & Refining Co. of Houston to do business in Texas, challenged by the State, because of majority ownership of its stock by the Standard Oil Co. of New Jersey, outlawed in 1911, was upheld by District Judge George Calhoun. The Attorney General gave notice of appeal to the Third Court of Civil Appeals at Austin. The case is virtually certain to go to the Supreme Court.

The Standard Oil Co. of New Jersey is not doing business in Texas, because it owns a majority of the Humble stock, Judge Calhoun held. He declared the evidence showed the directors of the Humble Co. have continued to operate it as an independent organization.

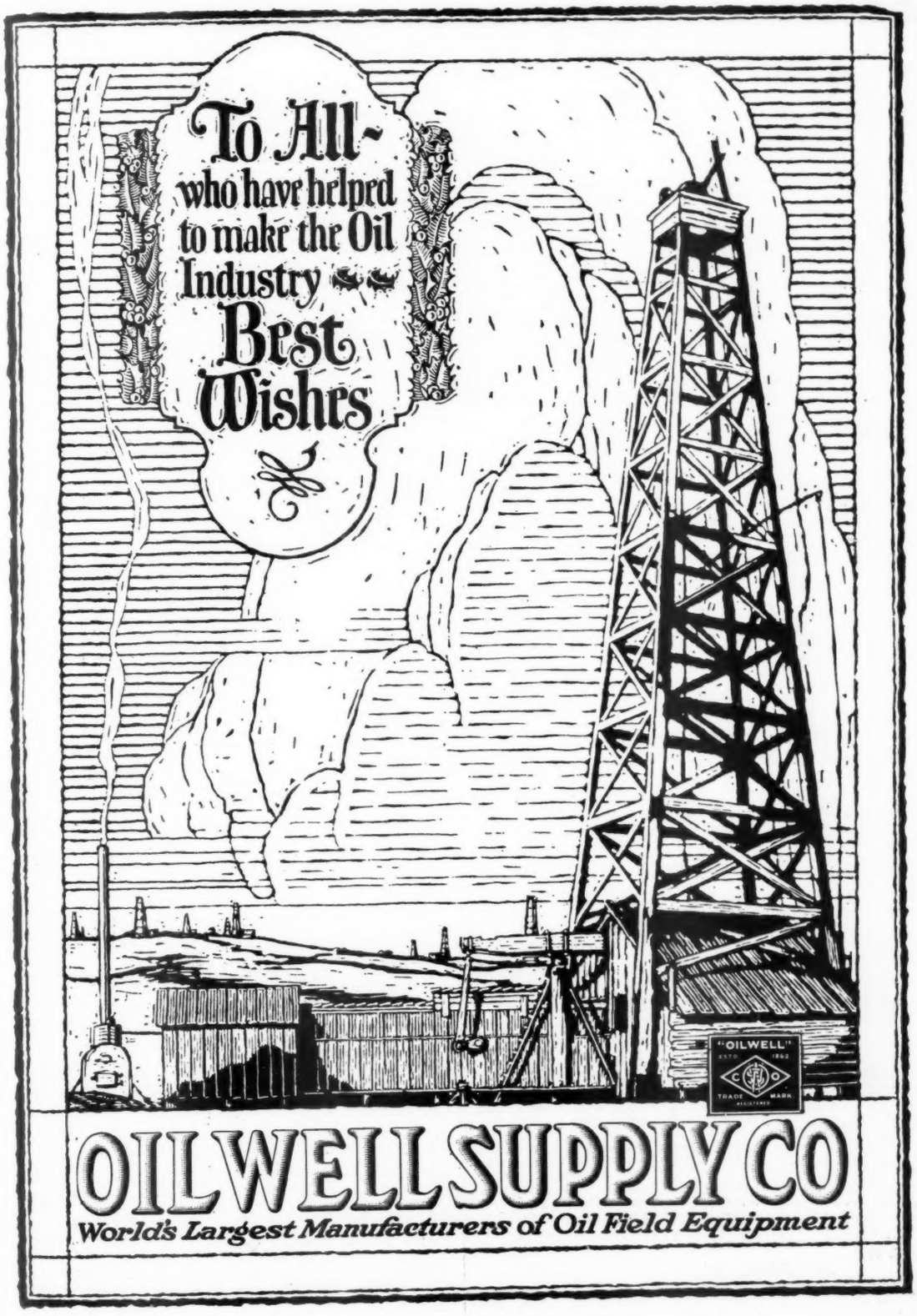
But two witnesses were on the stand, A. W. Taber, of the Attorney General's Department, and President W. S. Farish of the Humble Co. President Farish stated the company is worth approximately $160,000,000.

Judge Calhoun has three other anti-trust suits against refiners operating in Texas, not yet set, against The Texas Co., Gulf Refining Co. and Producers Refining Co. of Missouri, charged with violation of anti-trust statutes through contracts binding retailers to sell only the products of the particular refiners in filling stations for which equipment has been leased to the retailers at a small rental charge.

LUBRITE REFINING CO. CONTRACTS FOR CRUDE

A deal has been consummated between the Lubrite Refining Co. of St. Louis, Mo., and the Consolidated Pipe Line Co. of Tulsa covering the purchase of a large amount of crude oil for delivery at the former company's refinery located at St. Louis. The contract which is for an indefinite period, according to an official announcement, calls for the delivery of between 2,000 and 3,000 bbls. of oil daily. The price is based on the posted schedules of the major purchasing plus a pipe line charge with no premium to be paid.

The Consolidated Co. has pipe line connections with several fields in Oklahoma and delivers oil to other refineries within the State. The oil on the Lubrite purchase will be delivered by pipe line to West Tulsa and from there transported to St. Louis in tank cars.


To All
who have helped
to make the Oil
Industry
Best
Wishes
"OILWELL"
ESTD 1892
TRADE MARK
OILWELL SUPPLY CO
World's Largest Manufacturers of Oil Field Equipment

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

CHICAGO DIST. (Based on Group 3)—	Dec. 18		Dec. 11		Dec. 4	
50-52 450 end point (Naphtha)	.06¼	.06½	.06	.06¼	.05½	.05¾
56-58 450 end point	.06½	.06¾	.06	.06⅛	.06	.06¼
58-60 437 end point (New Navy)	.07	.07¼	.06½	.06⅞	.06½	.06⅞
60-62 400 end point	.08	.08¼	.07¾	.08	.07¾	.08
64-66 375 end point	.09	.09¼	.08¾	.09	.08½	.08¾
68-70 360 end point	.10	.10¼	.09¾	.10	.09¾	.10
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.06½	.06¾	.06	.06½	.05¾	.06
56-58 450 end point	.06¾	.07	.06½	.06¾	.06¼	.06½
58-60 437 end point (New Navy)	.07¼	.07½	.06¾	.07	.06½	.06¾
60-62 400 end point	.08¼	.08½	.08	.08¼	.07½	.07¾
64-66 375 end point	.09	.09¼	.08¾	.09¼	.08½	.08¾
68-70 350-365 end point	.10	.10¼	.09¾	.10	.09½	.09¾
KANSAS—						
58-60 437 end point (New Navy)	.07¼	.07½	.07	.07¼	.06¾	.07
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.06¼	.06½	.06	.06¼	.05½	.05¾
50-52 440 end point (Naphtha)	.06¼	.06¾	.06	.06½	.05¾	.06¼
56-58 450 end point	.06¾	.07	.06½	.06¾	.06¼	.06½
58-60 437 end point (New Navy)	.07	.07¼	.06¾	.07	.06½	.06¾
60-62 400 end point	.08¼	.08½	.07¾	.08¼	.07¼	.07½
64-66 390 end point	.08¾	.09	.08¾	.09	.08	.08¼
64-66 375 end point	.09	.09¼	.09	.09¼	.08¼	.08½
NORTH LOUISIANA—						
56-58 450 end point	.06	.06½	.06	.06½	.06	.06½
58-60 437 end point (New Navy)	.06¾	.07	.06¾	.07	.06¾	.07
60-62 400 end point	.07¼	.08	.07¾	.08	.07½	.07¾
64-66 400 end point	.08¼	.08½	.08¼	.08½	.07¾	.08
64-66 390 end point	.08¾	.09	.08¾	.09	.08½	.08¾
ARKANSAS—						
58-66 450 end point	.07	.07¼	.07	.07¼	.07	.07¼
58-60 437 end point (New Navy)	.07¼	.07½	.07¼	.07½	.07¼	.07½
64-66 375 end point	.09	.09¼	.08½	.09	.08½	.09
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (New Navy)	.09½		.09½		.09½	
PENNSYLVANIA—						
52 Naphtha	.08¾		.08¾		.08¾	
54 Naphtha	.09		.09		.09	
56 Gasoline	.09¾		.09¾		.09¾	
58 Gasoline	.09½		.09½		.10	
60 Gasoline	.10		.10		.10½	
62 Gasoline	.11		.11		.11½	
64 Gasoline	.13		.13		.13¼	
66 Gasoline	.15¼		.15¼		.15¾	
68-70 Gasoline	.16		.16		.16	

*Colorado points.

NATURAL GASOLINE

CHICAGO DIST. (Based on Group 3)—	Dec. 18		Dec. 11		Dec. 4	
Grade A, 72-78, under 375 e.p., rec. 90%	.05¼	.05½	.05½	.05¾	.05½	.05¾
Grade B, 76-82, 375 end point, rec. 85%	.05	.05¼	.05¼	.05½	.05¼	.05½
Grade C, 80-88, 350 end point, rec. 78%	.04¾	.05	.05	.05¼	.05	.05¼
OKLAHOMA (Group 3)—						
Grade A, 72-78, under 375 e.p., rec. 90%	.05½	.05¾	.05¼	.05½	.05¼	.05¾
Grade B, 76-82, 375 end point, rec. 85%	.05	.05½	.05¼	.05½	.05¼	.05½
Grade C, 80-88, 350 end point, rec. 78%	.04½	.04¾	.04¾	.05	.04¾	.05
Grade D, 88-92, 350 end point	.04½	.04¾	.04¾	.05	.04¾	.05
NORTH TEXAS—						
80-84 compression	.04¾	.05	.04¾	.05	.04¾	.05
84-90 compression	.04¾	.05	.04¾	.05	.04¾	.05
72-76 absorption	.05¼	.05½	.05¼	.05½	.05¼	.05½
76-82 absorption	.05	.05¼	.05	.05¼	.05	.05¼
NORTH LOUISIANA—						
Grade B	.05	.05¼	.05	.05¼	.05¼	.05½
Grade C	.04¾	.05	.04¾	.05	.05	.05¼

MOTOR NATURAL GASOLINE (BLEND)

CHICAGO DIST. (Based on Group 3)—	Dec. 18		Dec. 11		Dec. 4	
58-62 437 end point	.06⅛	.06⅜	.05⅞	.06⅛	.05⅞	.06⅛
60-62 450 end point	.06¼	.06½	.05⅞	.06⅛	.05¾	.06
64-66 450 end point	.06⅛	.06⅜	.05⅞	.06⅛	.05⅞	.06⅛
OKLAHOMA (Group 3)—						
60-62 450 end point	.06¼	.06½	.06	.06¼	.05¾	.06
64-66 437 end point	.06½	.06¾	.06¼	.06½	.05¾	.06¼
68-70 430-435 end point	.06½	.06¾	.06¼	.06½	.05¾	.06¼
NORTH TEXAS—						
58-62 440 end point	.06⅜	.06⅝	.06	.06¼	.06	.06⅛
58-60 450 end point	.06⅜	.06⅝	.06	.06¼	.06	.06⅛
PENNSYLVANIA—						
*60-62	.09½		.09½		.09½	
*64-66	.09½		.09½		.09½	
*66-68	.09½		.09½		.09½	
*68-70	.09½		.09½		.09½	

*At Sistersville, W. Va.

BURNING OIL

CHICAGO DIST. (Based on Group 3)—	Dec. 18		Dec. 11		Dec. 4	
41-43 water white Kerosene	.04½	.04⅝	.04⅝	.04⅝	.04⅝	.04⅝
42-44 water white Kerosene	.04½	.04¾	.04½	.04⅞	.04½	.04¾
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04⅜	.04⅝	.04½	.04¾	.04½	.04¾
42-43 water white Kerosene	.04½	.04¾	.04⅝	.04¾	.04⅝	.04⅝
41-43 prime white Kerosene	.04¼	.04⅜	.04¼	.04⅜		
KANSAS—						
41-43 water white Kerosene	.04¾	.05	.04¾	.05	.04¾	.05
NORTH TEXAS—						
41-43 water white Kerosene	.04½	.04¾	.04½	.04¾	.04¼	.04¾
41-43 prime white Kerosene	.04¼	.04½	.04¼	.04½	.04¼	.04¾
40-42 prime white Distillate	.04	.04¼	.04	.04¼	.04	.04¼
42-44 water white Kerosene	.04¾	.05	.04⅛	.05	.04¾	.05
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04¾	.05	.04¾	.05	.04¾	.05
42-43 water white Kerosene	.05	.05¼	.05	.05¼	.05	.05¼
ARKANSAS—						
41-43 water white Kerosene	.04¾	.05	.04¾	.05	.04¾	.05
42-44 water white Kerosene	.05	.05¼	.05	.05¼	.05	.05¼
ROCKY MOUNTAIN STATES—						
*40-42 prime white Kerosene	.07½		.07½		.07½	
PENNSYLVANIA—						
43 Kerosene prime white	.06¾		.06¾		.06¾	
45 Kerosene water white	.07		.07		.07	
46 Kerosene water white	.07¾		.07¾		.07¾	
47 Kerosene water white	.08		.08		.08	
36 Miners' Neutral	.07		.07		.07	

*Colorado points.

FUEL OILS

CHICAGO DIST. (Based on Group 3)—	Dec. 18		Dec. 11		Dec. 4	
24-26 Fuel Oil (sellers' cars, Group 3)	.75	.80	.72½	.77½	.70	.75
22-24 (El Dorado)	.65	.70	.62½	.67½	.62½	.67½
18-20 (Smackover)	.57½	.60	.55	.60	.55	.60
32-36 Gas Oil	.02⅜	.02⅝	.02¼	.02½	.02¼	.02⅜
3-40 Straw distillate	.03	.03¼	.03	.03¼	.03⅛	.03⅜
KANSAS—						
24-26 Fuel Oil	.90	.95	.90	.95	.85	.90
32-36 Gas Oil	.02¾	.03	.02½	.02¾	.02½	.02¾
38-40 Distillate	.03½	.03¾	.03½	.03¾	.03½	.03¾
OKLAHOMA (Group 3)—						
24-26 Fuel Oil (buyers' cars)	.75	.80	.70	.75	.65	.70
24-26 Fuel Oil (sellers' cars)	.80	.85	.75	.80	.70	.75
28-30 Fuel Oil (sellers' cars)	.85	.90	.85	.90	.80	.85
32-36 Gas Oil	.02⅜	.02½	.02⅜	.02⅝	.02¼	.02½
38-40 Straw Distillate	.03	.03¼	.03	.03¼	.03	.03¾
NORTH TEXAS—						
24-26 Fuel Oil	.75	.80	.70	.75	.60	.70
26-30 Fuel Oil	.80	.85	.75	.80	.70	.75
32-36 Gas Oil	.02½	.02⅜	.02½	.02⅜	.02¼	.02¾
36-38 Gas Oil	.02⅝	.02¾	.02⅝	.02¾	.02½	.02¾
38-40 Straw Distillate	.03	.03¼	.03	.03¼	.02⅞	.03⅛
NORTH LOUISIANA—						
20-22 Fuel Oil	.70	.75	.70	.75	.70	.75
32-36 Gas Oil	.02½	.02¾	.02½	.02¾	.02½	.02¾
38-40 light straw distillate	.03		.03		.03	
ARKANSAS—						
38-40 Distillate	.03		.03		.03	
32-36 Gas Oil	.02¾		.02¾		.02¾	
22-26 Refinery Fuel Oil	.70	.75	.65	.70	.65	.70
GULF COAST (South Texas)—						
Gas oil	.03½	.04	.02¾	.03¼	.02¾	.03¼
Fuel oil	1.15	1.20	1.10	1.15	1.10	1.15
PENNSYLVANIA—						
30-34 Fuel Oil	.04¾		.04¾		.04¾	
36-40 Fuel Oil	.05		.05		.05	
34 Neutral	.07½		.08		.08	

NEUTRAL OILS

OKLAHOMA (Group 3)—	Dec. 18		Dec. 11		Dec. 4	
Pale Neutrals:						
70-80 vis., 2½ color, 20-25 cold test	.04	.04¼	.04	.04¼	.04	.04¼
100 vis., 2 color, 20-25 cold test	.05	.05½	.05	.05½	.05	.05½
100 vis., 3 color, 20-25 cold test	.04¾	.05	.04¾	.05	.04¾	.05
150 vis., 3 color, 20-25 cold test	.09½	.10	.09½	.10	.09½	.10
150 vis., 4 color, 20-25 cold test	.09	.09½	.09	.09½	.09	.09½
180 vis., 4 color, 23-28 cold test	.11¼	.11¾	.11¼	.11¾	.11¼	.11¾
180 vis., 3 color, 23-28 cold test	.12	.12½	.12	.12½	.12	.12½
200 vis., 3 color, 23-28 cold test	.13	.13½	.13	.13½	.13	.13½
200 vis., 4 color, 23-28 cold test	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
200 vis., 3 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
220 vis., 4 color, 25-30 cold test	.13¼	.13¾	.13¼	.13¾	.13¼	.13¾
240 vis., 3 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
240 vis., 4 color, 25-30 cold test	.14¼	.14¾	.14¼	.14¾	.14¼	.14¾
280 vis., 3 color, 25-30 cold test	.17½	.18	.17½	.18	.17½	.18
280 vis., 4 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
300 vis., 3 color, 25-30 cold test	.18	.18½	.18	.18½	.18	.18½
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
180 vis., 6 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
200 vis., 5 color, 23-28 cold test	.11½	.12	.11½	.12	.11½	.12
200 vis., 6 color, 23-28 cold test	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
220 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
220 vis., 6 color, 25-30 cold test	.11¾	.12¼	.11¾	.12½	.11¾	.12½
240 vis., 5 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 6 color, 25-30 cold test	.12¾	.13¼	.12¾	.13¼	.12¾	.13¾
280 vis., 5 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 6 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
300 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
150-160 vis., 1 color, 40-50 cold test	.04½	.05	.04½	.05	.04½	.05
190-200 dark green, 40-50 cold test	.03½	.04	.03½	.04	.03½	.04
600 steam refined	.16		.16		.16	
590-600 Bright Stock	.23	.26	.23	.26	.23	.26
600-610 Bright Stock	.28	.31	.28	.31	.28	.31
Waxes:						
124-126 White Crude Scale Wax	.02¾	.03	.02¾	.03	.02¾	.03

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

PENNSYLVANIA—	Dec. 18	Dec. 11	Dec. 4
150, 3 color	.22½	.21¼	.21¼
180, 3 color	.25½	.24	.24
200, 3 color	.27	.26	.26
220, 3 color	.30	.29	.29
600, steam refined	.13	.11½	.11¾
635, steam refined	.14½	.14	.14
650, steam refined	.16	.15	.15
600, Pennsylvania flash	.18	.17	.17
630, Pennsylvania flash	.23	.23	.23
*550, E filtered	.15½	.15	.15
*600, E filtered	.17½	.17	.17
600, E filtered	.15¾	.15¼	.15¼
600, D filtered	.23	.21	.21
550, E filtered	.14½	.14¼	.14¼
550, D filtered	.18	.16	.16
Pennsylvania Bright Stock	.31¾	.31½	.31½
†122-124 White Crude Scale Wax	.03⅛	.03⅜	.03⅜
†122-124 White Crude Scale Wax	.03½	.03⅜	.03⅜
300 Mineral Seal	.07½	.07½	.07⅝

*At Warren, Penn. †At New York City.

GULF COAST (South Texas)—	Dec. 18		Dec. 11		Dec. 4	
Lubricating Stocks:						
Zero Black	.06½	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.09	.10	.09	.10	.09	.10
No. 2½ color, 150 vis., pale oil	.10½	.11½	.10½	.11½	.10	.11
No. 3 color, 200 vis., pale oil	.11½	.12½	.11	.12½	.11	.12½
No. 3½ color, 300 vis., pale oil	.14	.15	.14	.15	.14	.15
No. 3½ color, 500 vis., pale oil	.15½	.16½	.16	.17	.16	.17
No. 3½ color, 750 vis., pale oil	.21	.23	.21	.23	.21	.23
No. 1½ color, 150 vis., pale, filtered	.21	.22	.21	2.2	.21	.22
No. 2 color, 200 vis., pale, filtered	.23	.25	.23	.25	.23	.25
No. 2½ color, 300 vis., pale, filtered	.28	.29				
No. 3½ color, 500 vis., pale, filtered	.32	.33	.32	.33	.32	.33
No. 3½ color, 750 vis., pale, filtered	.38	.40	.38	.40	.38	.40
No. 5 color, 200 vis., red oil	.10	.11	.10	.11	.10	.11
No. 5 color, 300 vis., red oil	.11½	.12½				
No. 5 color, 500 vis., red oil	.13½	.14½	.13½	.14½	.13½	.14½
No. 5 color, 750 vis., red oil	.20	.21	.20	.21	.20	.21

NEW YORK DOMESTIC MARKET

Motor Gasoline	Dec. 18	Dec. 11	Dec. 4
Greater: New York, in steel barrels	.15½	.15½	.15½
New York State (outside Greater New York and New England, tank wagon	.15½	.15½	.15½
New Jersey, tank wagon	.15½	.15½	.15½
V. M. P. Naphtha, in steel barrels	.14½	.14½	.14½
Kerosene:			
Greater New York, tank wagon	.15	.15	.15
New York State (outside Greater New York and New England, tank wagon	.15	.15	.15
Gasoline in bulk, delivered at N. Y.	.09½	.09½	.09½
New Jersey, tank wagon	.14	.14	.14
Lubricating Oil (Industrial) at refinery:			
Bayonne, N. J.:			
Cylinder, extra light filtered, in barrels	.36½	.36½	.36½
Cylinder, light filtered, in barrels	.31½	.31½	.31½
Cylinder, Bright Stock	.44	.44	.44
Cylinder, steam refined (600)	.21½	.21½	.21½
Black, in bulk	.09½	.09½	.09½
Bloomless, white, 30-31 gravity, 170 vis.	.43	.43	.43
Bloomless, 885 specific gravity	.10½	.10½	.10½
Red Paraffin:			
170 viscosity	.18½	.18½	.18½
212 viscosity	.20	.20	.20
265 viscosity	.22	.22	.22
295 viscosity	.25	.25	.25
Paraffin, 903 specific gravity	.22½	.22½	.22½
*Fuel Oil:			
Bunker Oil, 14 plus, delivered in barges, bbl.	1.35		1.35
Diesel Oil, at refinery, gallon	.03½	.03½	.03½
Furnace oil, tank wagon, gallon	.10	.10	.10
Gas Oil, delivered in New York	.04	.04	.04
Wax, fully refined:			
120-122 a.m.p.	.03⅜	.03⅜	.03⅜
125-127 a.m.p.	.03¾	.03¾	.03¾
130-132 a.m.p.	.04¼	.04¼	.04¼
135-137 a.m.p.	.05¼	.05¼	.05¼

*Lighterage, 6.5c a barrel extra.

NEW YORK EXPORT PRICES

	Dec. 18	Dec. 11	Dec. 4
Motor Gasoline, in cases, gallon	.24.4	.24.4	.24.4
Motor Gasoline, U. S. Navy, spec., gallon	.10.5	.10.5	.10.5
Naphtha, 60° F., 59-61 spec. grav.	.12.0	.12.0	.12.0
Naphtha, 60° F., 63-66 spec. grav.	.14.0	.14.0	.14.0
Naphtha, 60° F., 66-68 spec. grav.	.15.5	.15.5	.15.5
Kerosene:			
Standard white, in bulk, gallon	.07	.07	.07
Standard white, in barrels, gallon	.14	.14	.14
Standard white, in cases, gallon	.17.15	.17.15	.17.15
Water white, in bulk, gallon	.08	.08	.08
Water white, in barrels, gallon	.15	.15	.15
Water wihte, in cases, gallon	.18.5	.18.5	.18.15

CRUDE OIL PRICES

November 19.—Magnolia Petroleum Co. advanced Corsicana light (Powell) crude 25 cents. The same company on October 30 reduced this crude 25 cents. Change at that time was not met by all major purchasing companies and resulted in the return to the posted price of $1.

November 20.—Lance Creek and Osage crudes advanced 10 cents.

December 13.—The Texas Co. in the fields of North and Central Texas, where it buys crude on a gravity basis, changed its prices on all schedules above 33° gravity to conform to those of the Humble Oil & Refining Co. Below 33° gravity was unchanged.

December 14.—Joseph Seep Purchasing Agency advanced all grades of Pennsylvania crude 25 cents.

December 15.—Magnolia Petroleum Co. in the fields of North and Central Texas where it buys crude on a gravity basis, adjusted its prices to conform to those of the Humble Oil & Refining Co. and The Texas Co. for all schedules above 33° gravity. Below 33° gravities were unchanged.

December 18.—Gulf Pipe Line Co. met The Texas Co. prices in North and Central Texas where crude is purchased on a gravity basis.

Oklahoma and Kansas

Below 33°	$ .75
33° to 39.9°	1.00
40° and above	1.25
Magnolia Petroleum Co.	
Below 28°	.40
28° to 30.9	.60
31° to 32.9°	.75

Arkansas and North Louisiana

Caddo, 38° and above	$1.10
35° to 37.9°	1.00
32° to 34.9°	.90
Below 32°	.75
Homer, 35° and above	1.10
33° to 34.9°	1.00
31° to 32.9°	.90
Below 31°	.75
Haynesville, 33° and above	1.00
Below 33°	.90
El Dorado, 33° and above	1.10
Below 33°	1.00
Bull Bayou, 38° and above	1.05
35° to 37.9°	.90
32° to 34.9°	.75
De Soto	1.10
Crichton	.90
Bellevue	.75
Smackover, 26° and above	.75
25° to 25.9°	.60
24° to 24.9°	.50
Below 24°	.40
*Stephens, Ark., 28° and above	.80
26° to 27.9°	.75

*Posted by Atlantic Oil Prod. Co.

Wyoming and Montana

Rock Creek, (Wyo.)	$ .60
Salt Creek	.60
Big Muddy	.45
Mule Creek	.45
Grass Creek	.95
Elk Basin	.95
Lance Creek	.90
Osage	.90
Cat Creek (Mont.)	.90
Sunburst, (Mont.)	.70
Greybull and Torchlight	.95
Hamilton Dome	.52½

Lander and Lost Soldier based on contracts covering entire production of fields.

North Texas and Central Texas

Corsicana light	$1.00
Corsicana heavy	.40
Mexia	1.00
Currie	1.00
Powell	1.00
Thrall	1.00

Moran, Burkburnett, Electra, Archer County, Stephens County, Strawn, Ranger, Desdemona, Pioneer and Young County.

Prairie Oil & Gas Co., Sinclair Crude Oil Purchasing Co.:

Below 33°	$ .75
33° and 39.9°	1.00
40° and above	1.25

Humble Oil & Refining Co., The Texas Co., and Magnolia Petroleum Co., and Gulf Pipe Line Co.:

33° to 35.9°	1.00
36° to 38.8°	1.15
39° and above	1.30
Magnolia Petroleum Co.:	
Below 28°	.40
28° to 30.9°	.60
31° to 32.9°	.75
Humble Oil & Refining Co.:	
Below 30°	.80
30° to 32.9°	.90
The Texas Co. and Gulf Pipe Line Co.:	
Below 33°	.75

Gulf Coast

Gulf Pipe Line Co., Goose Creek, Hull, Sour Lake, Batson, Saratoga, Spindletop, Orange, Vinton, Edgerly, Jennings	$1.00
Grade "B," Pierce Junction, Blue Ridge	.90
The Sun Pipe Line Co., Grade "A," Humble, Hull, Goose Creek, Orange, Spindletop, Saratoga, Batson, Dayton, Sour Lake	1.00
Humble Pipe Line Co., Goose Creek, Hull, West Columbia, Orange	1.00
Grade "B," Pierce Junction	.90
Texas Pipe Line Co., Humble, West Columbia, Orange, Sour Lake, Saratoga, Batson, Vinton, Jennings, Markham	1.00
Sinclair Pipe Line Co., West Columbia, Damon Mound	1.00

California

14° to 19.9°	$ .60
20° to 20.9°	.61
21° to 21.9°	.62
22° to 22.9°	.63
23° to 23.9°	.64
24° to 24.9°	.65
25° to 25.9°	.66
26° to 26.9°	.67
27° to 27.9°	.68
28° to 28.9°	.69
29° to 29.9°	.70
30° to 30.9°	.71
31° to 31.9°	.72
32° to 32.9°	.73
33° to 33.9°	.74
34° to 34.9°	.75
35° gravity and above	.76

Eastern States

Penna Grade Oil in New York Transit Lines	$2.85
Bradford District Oil in National Transit Lines	2.85
Penna Grade Oil in National Transit Lines	2.60
Penna Grade Oil in Southwest Pa. Pipe Lines	2.60
Penna Grade Oil in Eureka Pipe Line Lines	2.60
Penna Grade Oil in Buckeye Pipe Line Lines	2.60
Corning Grade Oil in Buckeye Pipe Line Lines	1.25
Cabell Grade Oil in Eureka Pipe Line Lines	1.20
*Somerset Medium Oil in Cumberland Pipe Line Lines	1.15
*Somerset Light Oil in Cumberland Pipe Line Lines	1.30
Ragland Grade Oil in Cumberland Pipe Line Lines	.75
Lima	1.43
Wooster	1.25
Illinois	1.22
Indiana	1.23
Princeton	1.22
Plymouth	.60
Waterloo	.70
†Petrolia, Canada	2.03
†Oil Springs, Canada	2.10

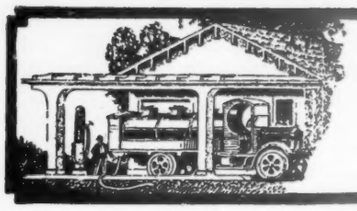
*Somerset oil commands 6 cents over the above posted price.

†Plus Government bounty of 52½c.

Mexican Crude

*Tuxpam (f. o. b. Mexican ports)	$ .80
†Panuco (f. o. b. Mexican ports)	.65
Tuxpam (New York)	1.31
Panuco (New York)	1.06

*Plus 26.69 c tax. †Plus 15.58c tax Prices based on contracts.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, Dec. 18

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Chicago district	12.0	..	14.0	10.0

Tank wagon prices on April 10, 1922, g. up 1½c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c; k. down 1c; Oct. 10, g. down 2c; Oct. 31, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c.

Decatur, Ill.	12.2	..	14.2	10.5
East St. Louis.	11.1	..	13.35	9.6
Joliet	12.4	..	14.4	10.7
Peoria	12.2	..	14.2	10.5
Quincy	12.2	..	14.2	10.3
Davenport, Ia.	12.5	..	14.5	10.9
Des Moines	12.5	..	14.5	10.9
Keokuk	12.5	..	14.5	10.9
Sioux City	12.0	..	14.0	10.5
Duluth, Minn.	13.2	..	15.2	11.6
Minneapolis	12.9	..	14.9	11.6
La Crosse, Wis.	13.2	..	15.2	11.4
Milwaukee	12.0	..	14.0	10.2
Madison	12.3	..	14.3	10.5
Detroit, Mich.	10.8	..	12.8	11.2
Grand Rapids	12.7	..	14.7	11.1
Saginaw	12.9	..	14.9	11.3
Evansville, Ind.	14.0	2.0	16.0	10.5
Fort Wayne	14.4	2.0	16.4	10.9
Indianapolis	14.2	2.0	16.2	10.7
South Bend	14.4	2.0	16.4	10.9
Fargo, N. D.	14.6	1.0	16.6	13.6
Huron, S. D.	16.0	2.0	18.0	12.1
Sioux Falls	15.5	2.0	17.5	11.6
*Kansas City	11.9	1.0	13.9	9.3
Springfield	11.8	..	13.8	10.2
*St. Louis	11.6	.5	13.9	10.0
*St. Joseph	12.3	.5	14.3	10.2
Wichita, Kans.	11.8	..	13.8	9.8

*City tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
*Pittsburgh, Pa.	14.0	..	19.0	14.0
*Philadelphia	14.0	..	19.0	14.0
*Scranton	14.0	..	19.0	14.0
*Allentown	14.0	..	19.0	14.0
*Altoona	14.0	..	19.0	14.0
Dover, Del.	15.0	1.0	18.0	14.0
Wilmington	15.0	1.0	18.0	14.0
Providence, R. I	15.5	..	18.0	15.0
Springfield, Mass	14.5	..	17.0	15.0
Worcester	14.5	..	17.0	15.0
Boston	14.5	..	17.0	15.0
Hartford, Conn.	16.5	1.0	19.0	15.0
New Haven	16.5	1.0	19.0	15.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Atlanta, Ga.	16.0	3.0	18.0	14.0
Augusta	18.0	3.0	20.0	15.0
Macon	18.0	3.0	20.0	15.5
Savannah	16.0	3.0	18.0	14.0
Birmingham, Ala.	16.0	2.0	18.0	15.5
Mobile	16.0	2.0	17.0	13.5
Montgomery	16.0	2.0	18.0	16.0
Clarkdale, Miss	14.0	1.0	16.0	14.0
Jackson	14.0	1.0	16.0	12.0
Natchez	13.5	1.0	15.5	13.5
Vicksburg	13.5	1.0	15.5	13.5
Jacksonville, Fla	16.0	3.0	18.0	14.0
Miami	18.0	3.0	20.0	15.5
Pensacola	16.0	3.0	18.0	14.5
Tampa	16.0	3.0	18.0	14.0
Covington, Ky.	16.0	1.0	18.0	13.0
Lexington	15.0	1.0	17.0	14.0
Louisville	14.0	1.0	16.0	13.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Denver, Colo.	13.0	2.0	15.0	12.5
Glenwood Spgs.	19.0	2.0	....	16.5
Pueblo	15.0	2.0	17.0	12.5
Basin, Wyo.	16.0	1.0	....	13.0
Casper	14.0	1.0	16.0	11.0
Cheyenne	15.5	1.0	17.5	13.0
Cody	17.0	1.0	....	14.0
Lander	16.0	1.0	....	13.0
Billings, Mont.	18.5	2.0	20.5	14.5
Butte	20.0	2.0	22.0	15.0
Great Falls	20.0	2.0	22.0	16.0
Helena	20.0	2.0	22.0	16.0
Miles City	19.5	2.0	21.5	15.5
Boise, Idaho	20.0	2.0	22.0	18.0
Salt Lake, Utah	18.0	2.5	20.0	15.5
Ogden	18.0	2.5	20.0	15.5
Albuquerque, N. M.	18.0	1.0	20.0	15.5

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Newark, N. J.	15.5	..	....	14.0
Atlantic City	15.5	..	....	14.0
Annapolis, Md.	16.0	1.0	19.0	14.0
Baltimore	16.0	1.0	19.0	13.0
Cumberland	16.0	1.0	19.0	15.0
Washington, D. C.	15.0	..	18.0	13.5
Norfolk, Va.	18.0	3.0	20.0	13.0
Petersburg	18.0	3.0	20.0	14.5
Danville	18.0	3.0	20.0	15.5
Richmond	18.0	3.0	20.0	13.5
Roanoke	18.0	3.0	20.0	15.0
Keyser, W. Va.	17.0	2.0	....	15.0
Charleston	17.0	2.0	....	13.5
Parkersburg	17.0	2.0	....	12.0
Wheeling	17.0	2.0	....	13.5
Charlotte, N. C.	18.0	3.0	....	14.5
Hickory	18.0	3.0	....	15.0
Mt. Airy	18.0	3.0	....	14.5
Salisbury	18.0	3.0	....	15.0
Charleston, S. C.	18.0	3.0	....	12 5
Columbia, S. C.	18.0	3.0	20.0	14.5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Dallas, Tex.	12.0	1.0	15.0	8.0
Fort Worth	12.0	1.0	15.0	10.0
Houston	14.0	1.0	18.0	11.0
San Antonio	12.0	1.0	15.0	9.0
El Paso	14.0	1.0	17.0	12.0
Muskogee, Okla.	9.0	1.0	12.0	10.0
Oklahoma City.	12.0	1.0	15.0	10.0
Tulsa	9.0	1.0	12.0	10.0
Ft. Smith, Ark.	13.0	1.0	16.0	12.0
Little Rock	15.0	3.0	18.0	12.0
Texarkana	15.0	3.0	18.0	12 0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Albany, N. Y.	15.5	..	18.5	14.0
*New York	15 5	..	18.0	15.0
Buffalo	14.0	..	17.0	15.0
Rochester	15.0	..	17.0	13.0
Syracuse	15.0	..	17.0	15.0
Boston, Mass.	14.5	..	17.0	15.0
Providence, R.I.	16.5	..	19.0	15.0
Augusta, Me.	15 5	1.0	19.0	15.0
Manchester	15.5	1.0	19.0	15.0
Burlington, Vt.	15.5	1.0	19.0	15.0

*Price in steel barrels.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
All Ohio points.	16.0	..	18.0	13.0

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
New Orleans, La	12.5	1.0	14.5	12.0
Alexandria	13.5	1.0	15.5	13.0
Baton Rouge	12.0	1.0	14.0	11.5
Lake Charles	13.5	1.0	15.5	13.0
Shreveport	13.5	1.0	15.5	13.0
Memphis, Tenn.	15.5	2.0	17.0	14.0
Chattanooga	15.5	2.0	17.5	14.5
Knoxville	16.5	2.0	18.5	15.0
Nashville	15.5	2.0	17.5	14.0
Bristol	17.0	2.0	19.0	15.5
Little Rock, Ark	16.5	3.0	18.5	13.0
West Helena	16.5	3.0	18.5	13.0

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
San Francisco	13.0	2.0	16.0	15.5
Los Angeles	12.0	2.0	15.0	15.5
Fresno	13.5	2.0	16.5	17.5
Reno, Nev.	16.5	2.0	19.5	19.0
Portland, Ore.	15.0	3.0	18.0	16.5
Seattle, Wash.	13.0	1.0	16.0	16.5
Tacoma	13.0	1.0	16.0	16.5
Spokane	17.0	1.0	20.0	20.5
Phoenix, Ariz.	19.0	3.0	22.0	21.5
Honolulu, H.	12.5	..	15.5	17.5
Juneau, Alaska	13.5	..	16.5	18.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Incids tax of	Gasoline Service station	Kero. Tank wagon
Omaha	12.25	..	14.25	10.5
Crawford	13.0	..	....	11.25
McCook	13.75	..	15.75	12.0
Norfolk	12.75	..	14.75	11.00
North Platte	13.75	..	15.75	11.75
Scotts Bluff	13.25	..	15 25	11.25

TANK WAGON PRICES

Effective December 15, Standard Oil Co. of Indiana advanced gasoline tank wagon and service station prices 2 cents at South Bend, Ind.

GAS AND FUEL OIL UP IN HOUSTON DISTRICT

HOUSTON, Tex., Dec. 17.—With the approach of the holiday season, inquiries for zero cold test lubricants have slumped. The condition is not one to cause worry to refiners, as sufficient orders have been booked for the month in the Houston territory. The slight falling off in inquiries is charged purely to the rush of Christmas buying.

The only change in quotations is on gas oil and fuel oil. Both products have been marked up and the tendency is toward further increases. Gas oil in particular is scarce at present in the coastal territory. The few concerns having this product show a tendency to hold it, evidently expecting still higher prices. Gas oil is being shipped by tankers to both the Atlantic Coast and to Continental Europe.

The demand for fuel oil is chiefly local. The South Texas region had its first touch of cold weather this week and the necessity for furnace heating was immediate. As most of the office buildings use fuel oil this brought a jump in consumption. The advance thus far has been 5 cents a barrel, the price ranging from $1.15 to $1.20.

So far as the lull in inquiries is concerned, some refiners seem pleased. They anticipate higher crude prices, with consequent higher quotations on refined products. With a lull in inquiries, buying may be held off until something is known of the trend of the crude market. The advance of Pennsylvania crude oils last Friday is taken as an indication of the future of oils having lubricating content. This advance gives South Texas refiners further belief they soon will be paying more than $1 plus small premiums for crude oil.

Cold weather is expected to stimulate buying of all winter grades of zero cold test oils. Their value is pronounced in cold weather and they now enjoy wide distribution through sections that will have most of cold weather.

Movement of products for December thus far has been in excess of that for November for the corresponding date. As November was the best month of the year, South Texas refiners are expecting to close with a month of record-breaking business.

BUYS TEXAS GASOLINE PLANT

The Hanlon Gasoline Co. of Tulsa, the newly organized concern which is building one of the largest gasoline plants in the world at Breckenridge, and which recently took over the properties of the Hi-Power Gasoline Corp. at that point, has purchased the plant of the Central Gasoline Producing Co. at Eliasville, Tex. The plant has an output of approximately 8,000 gallons of natural gasoline per day, but it is expected the production will be materially increased. The operation of the property and the marketing of the products will be in the hands of Chestnut & Smith Corp. of Tulsa.

MID-CONTINENT REFINERY OPERATIONS DECEMBER 8

A slight increase in gasoline and gas oil and fuel oil output, and a similar decrease in kerosene output were the principal features of the Western Petroleum Refiners Association report covering Mid-Continent refinery operations for the week ending December 8. Stocks of gasoline remained about the same while gas and fuel oil stocks declined. Due to the fact that kerosene stocks in Texas were not available it was impossible to gauge the decline or advance in kerosene stocks.

The report for the week ending December 8, compared with the one ending November 3, shows that gasoline stocks have decreased substantially as has fuel oil and gas oil stocks. Kerosene stocks have largely increased. The report for the week ending December 8, is based on 128 refineries and that for the week ending November 3, 115 refineries.

CONSOLIDATED STATEMENT COVERING ALL REPORTING REFINERIES FOR WEEK ENDING 7 A. M., DECEMBER 8, 1923

	Kansas	Oklahoma	Texas	La.-Ark.	Total	Wk. End. Dec. 1, 1923	Wk. End. Nov. 3
Number of refineries reporting	23	56	38	11	128	127	115
Daily capacity of stills, bbls.	81,900	254,700	127,650	26,100	490,350	481,350	437,660
Materials for stills, bbls.:							
Crude oil, Item A	270,285	682,753	567,226	84,590	1,604,854	1,666,074	1,454,718
Other oils (see note), Item B	41,757	108,204	217,652	16,569	383,182	350,136	805,983
Total	312,042	790,957	784,878	100,159	1,988,036	5,016,210	2,260,701
Output of finished products, gals.:							
Gasoline, Item C	4,112,829	11,055,055	6,093,522	973,277	22,234,683	21,785,870	20,830,685
Kerosene, Item D	1,337,310	3,246,008	1,865,190	326,936	6,775,444	8,511,743	5,950,833
Gas and fuel oil, Item E	5,569,928	14,571,463	16,011,216	1,758,559	37,911,166	32,947,607	30,786,187
Stocks on hand at close of week:							
Materials for stills, bbls.:							
Crude oil, Item J	605,810	4,345,184	1,047,028	916,145	6,914,167	6,679,449	5,429,353
Other oils (see note), Item K	20,153	859,239	370,886	512,625	1,762,903	1,827,407	1,575,191
Finished products, gals.:							
Gasoline, Item L	5,889,272	60,721,319	30,927,586	1,589,090	99,127,267	98,630,096	103,242,228
Kerosene, Item M	2,346,116	10,139,824	*	271,087	†12,757,027	21,243,362	13,377,463
Gas and fuel oil, Item N	9,886,209	47,181,215	38,049,600	2,655,670	97,772,694	110,023,407	115,229,176

Note—Other oils includes all oils other than crude which are either purchased or withdrawn from stocks and run to stills during the week. The total of Items A and B is, therefore, the net quantity of materials consumed by the reporting refineries in producing the quantities of products shown as the result of the operation of the refineries during the week. Item K includes all stocks of oils, other than crude, held for further refining.

*Not shown due to investigation of reports. †Texas not included.

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Refiners' Problems in 1923 and Outlook

Causes and Conditions Which Upset Industry Analyzed in the Light of Facts Since Known. Gravity Basis Discussed

By George N. Moore
President of the Western Petroleum Refiners Association
Before the American Petroleum Institute at St. Louis

The refiner in 1923 did more business and made less money, if he made any at all, than in any year in his history.

With an increase in the consumption of gasoline of more than 26 per cent, of lubricating oil of 15 per cent, of kerosene of 1 per cent, and of refined fuel oil and gas oil of 11 per cent the first 10 months, most refiners who buy crude oil in the open market have found themselves scraping the bottom of their cash registers and carrying heavy obligations with their bankers.

Fundamentally there was too much crude, but that is not the whole story. For a surplus of crude need not always mean, and in fact in many instances has not meant, too much gasoline.

There is too much wheat, but millers have not attempted to grind all the wheat and overload the market with flour. The price of flour has been determined by the price of wheat.

Equilibrium Necessary

In crude oil and gasoline the overproduction of gasoline has had a profound effect upon the price which has been paid for the raw material. When stocks of gasoline became burdensome, there was a great cry that the price of crude was too high to permit the refiner to live. Whether one regarded the price of crude as too high or too low at that particular time, one must admit that the refiner has a greater obligation to the producer than merely to overmanufacture gasoline and then to ask the producer to absorb the losses entailed by the refiner through an unjustifiable accumulation of stocks.

It is more clearly apparent than ever that the preservation of a fair equilibrium between the supply and the demand for gasoline and for other petroleum products is equally essential to the welfare of the producer, the refiner and the public.

In making this statement, I am not taking upon the shoulders of the refining industry the entire, nor even the major, responsibility of the year. The gasoline situation could quite easily have been created, even had the overproduction of crude oil been far less pronounced.

Tracing the Causes

At the end of May we had excessive stocks of gasoline, although to that time the crude supply had not become really burdensome. Nothing but a positive and unexpected shortage of crude, or a drastic restriction of runs by refiners could have prevented a precipitate decline in prices below the cost of production.

Unless the conditions of supply and demand create an overwhelming tendency, markets, for comparatively short periods at least, are governed more by competitive conflicts based upon the immediate and selfish interests of the moment than by long-range considerations or by rules of thumb.

Effects of Grading

In reviewing the causes of the refiner's troubles, perhaps the most outstanding phase of the competitive struggle east of the Rocky Mountains has been the change in the method of purchasing crude oil in the Mid-Continent Field, inaugurated by the major purchasing companies in the fall of 1922.

Before that time, in general, in the Mid-Continent Field, a barrel of oil had been a barrel of oil to the larger purchasing companies; the equality of the oil for gasoline-making purposes, roughly indicated by its gravity, was not recognized by proportionate graduations of price made by the larger companies. Such companies depended upon the general average of the crude purchased to justify uniform prices for various crudes which in actual refining experience had varying values.

On the other hand, the smaller and so-called independent refiners, constituting a great army of competition and purchasing, in the aggregate, hundreds of thousands of barrels, but individually comparatively small amounts of crude oil, paid for their crude, roughly, in accordance with its quality, and by paying premiums over the posted price obtained the lion's share of the lighter and more desirable crudes.

Change in Purchasing

The continuance of the policy of the larger companies of paying uniform prices for the varying crudes was contingent upon their ability to obtain sufficient crude. For years speculation had been common as to when a change in the method of purchasing would occur. It was anticipated the change, if any, would come when there was a severe competitive contest for light crudes.

There was such a struggle for crude in November and December, 1922. The light oil production of Mexico was falling off. The increasing production of California was a menace, but its future effect was not fully appreciated. Refiners' minds were directed principally toward the acquisition of sufficient crude to meet an unprecedented, but not accurately gauged, demand for gasoline. The consequence was a scramble for crude between hundreds of purchasers. Every barrel of Mid-Continent crude oil produced in November and December, 1922, was rapidly absorbed by refiners. No Mid-Continent oil went into pipe line or tank farm storage. There were small drafts on crude stocks. It is reasonable to suppose that under these conditions some major purchasing companies, with larger present and future obligations to furnish crude oil, drew quite heavily on their storage. Other companies, not having similar obligations, but put oil in storage despite the drafts on stocks as a whole.

Psychological Reaction

It was at this time that the major purchasing companies changed their previous method of buying oil, abandoned their flat prices for all grades, and commenced to purchase oil on the basis of gravity. The psychological effect and the resulting bullish feeling over the entire Mid-Continent Field can hardly be overestimated in its direct effect upon the subsequent movements of crude prices upward and downward and upon the gasoline situation. Independent refiners struggled the harder to hold their crude and to get more. The change added little, if any, to the amount actually purchased by the larger companies.

If this condition continued, it was apparent a general rise in the price of crude, caused by keen competition, was inevitable.

In retrospect, it is quite apparent that if either those purchasing companies which drew on storage had permitted the situation to ride along, or if the independent refiners had reduced their purchases to a point which would have permitted the larger purchasing companies to acquire additional quantities, the subsequent advances in price which have been severely criticized would not have occurred. My own view is that if the larger buyers of crude oil had been content to bide their time for a comparatively short period the independent refiners themselves soon would have recognized clearly that their purchases of crude were disproportionate to their actual refining needs. Candor compels me to say this is much clearer now than it was then.

January opened with a battle between competitors varying from a refinery using a few hundred barrels a day to purchasing companies requiring more than 100,000. This battle was most vigorous, notwithstanding that on January 1, 1923, the refiners had in refinery storage more than 21,000,000 barrels of gasoline, the largest amount ever held in refinery storage with the single exception of stocks on May 1, 1922, which were about 200,000 barrels higher. Thus the refiners were entering the period of low demand with stocks of gasoline at a point which was higher than they should have been at the beginning of the consuming season of 1923.

Open to Question

It is true that, due to the seasonal demand for gasoline, it is necessary to draw on refinery storage to carry the peak load of demand during the summer, but it is open to serious question, whether the refiners are not more apprehensive about meeting the peak demand than the facts of the past few years seem to require.

In 1920 the total draft on refinery gasoline stocks during the season of heaviest consumption was 8,460,887 bbls.; in 1921, 8,195,860 bbls.; and in 1922, 4,814,690 bbls., or an average draft on stocks during these three years of 7,157,146 bbls. Therefore, it would seem to be clearly indicated by experience that so far as the actual necessities of the situation are concerned the refining industry would have been in a healthy condition, and would have been fully prepared to meet the demands of the public, if the stocks of gasoline on hand January 1, 1923, should have been cut squarely in two.

Marginal Contracts

There are two methods of doing business with jobbers or distributors: One, the current sale of gasoline f.o.b. the refinery in tank car quantities at the prevailing market at the refinery; the other the sale under marginal contracts between the refiner and the jobber. The refiner guarantees the distributor certain specified quantities of gasoline, customarily over a period of months at a fixed margin of price below the prevailing tank wagon market. It is an effective guarantee of a profit to the jobber regardless of the tank wagon market, provided the jobber does a sufficient volume of business to pay his ordinary overhead.

Refiner's Position

Under these two methods a refiner may realize a net-back at the refinery on his marginal contract, either considerably

(Continued on Page 128)

INDUSTRIES NOW ON EVE OF GREAT DAY OF AUTOMOTIVE DEVELOPMENT

By H. L. Horning
President, Waukesha Motor Co., Representing the Society of Automotive Engineers
Before the American Petroleum Institute, St. Louis, Mo.

Nothing is lacking today but the necessity of public demand to bring forth the most efficient engines and fuels the world has ever known. It is possible today, with simple modification in our present types of automobile engines, to approach the economies of aviation engines with ordinary fuels. It is possible today with only slightly modified engines of current design with doped fuels to equal the economy averages of Diesel engines, the super-engines of pre-war days.

Both our industries are on the very eve of the great day of automotive development in which the public will be able to go farther on a dollar's worth of automobile or petroleum product than ever was dreamed of by inventors. Were the price of gasoline to go up decidedly for any reason, it would be a matter of time necessary to change to improved models and to get public distribution. There are devices available for the market now for application to all standard cars, which would bring the consumption down drastically. Certain companies are putting themselves in shape through research to set a performance standard in power, speed, economy, or whatever the public wants, and the next few years will see control in public hands even greater than now as to how much or little gasoline it uses.

The petroleum industry has a great opportunity to market a larger part of its heavy ends for house heating, and the one phase of this which holds back the wider used of petroleum products in this field is the excessive amount of air used to burn these fuels lowering the general efficiency. There is no doubt that the automotive engineers can aid the petroleum industry in the use of its heavy ends, and that a more careful design of combustion apparatus will develop a growing use of petroleum; and that in these next 10 years the anthracite coal question can be settled from outside that industry rather than within.

The petroleum industry has a great coal for steam engines in the fields, and has borne very high transportation costs when there was cheap fuel available. The automotive industry can be of immense benefit to the petroleum industry by furnishing them with reliable engines. There are scores of new uses to which the light portable four-cylinder types of automobile engines are being put. There is a strong demand for automotive apparatus to do pumping, drilling, case pulling and water pumping in the fields.

The automotive industry has huge plant equipments which slow up in the winter. The petroleum industry stores and produces its excess winter production for summer. In these days of cast gasoline surpluses and intense compe-

(Continued on Page 128)

PARKERSBURG
METAL TUG
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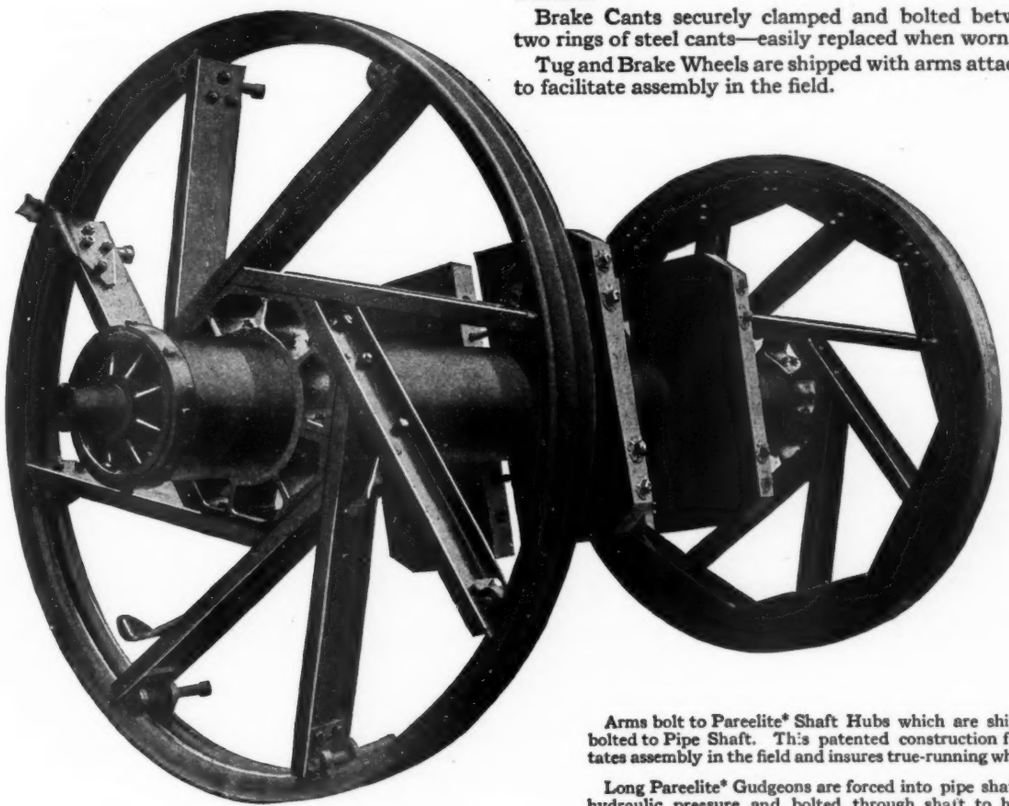
"V"-Grooved Pareelite* Tug Rim affords positive traction.

Brake Cants securely clamped and bolted between two rings of steel cants—easily replaced when worn.

Tug and Brake Wheels are shipped with arms attached to facilitate assembly in the field.



Arms bolt to Pareelite* Shaft Hubs which are shipped bolted to Pipe Shaft. This patented construction facilitates assembly in the field and insures true-running wheels.

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Hazards of Finding and Producing Oil

Shared by the Public With the Petroleum Industry Through Dependence Upon Its Products and Investment in Securities

By E. W. Marland
President of the Marland Oil Company
(Before the St. Louis Meeting of the American Petroleum Institute)

The finding branch of the petroleum industry, standing alone as distinguished from the producing, refining and other branches of the industry, is not a business, nor is it a science,—it is a speculation, a lottery.

The United States contains two thousand million acres. Two million acres, so far, have produced oil in commercial quantities.

Geologists tell us that 60 per cent of the United States will not produce oil under any circumstances. That leaves about 800,000,000 acres of possible territory.

They point out that of this acreage perhaps 796,000,000 acres are not built right to produce oil, or are "off structure." This leaves perhaps 2,000,000 acres more that may prove productive in addition to the 2,000,000 acres already developed.

Possibly the company with a good geological department has one chance in 10 or 20 of opening up a new pool, where the wildcatter, without such help, has only one in one or two hundred. Of course, the ratio is very much better in so-called proven areas, but no method has been devised whereby the existence or nonexistence of oil in commercial quantities in wildcat areas can be determined without a great number of failures for every successful test.

Overproduction Small

In times of overproduction, such as now, we are inclined to consider lightly the estimates made two years ago by the United States Geological Survey that the remaining oil content of the United States is approximately 9,000,000,000 barrels.

This temporary overproduction is very small, indeed, when compared to a nation's needs and its underground reserves.

At this time, with one of the greatest overproductions in the history of the industry, if no new wells were drilled for 60 days, the decline of the present wells would eliminate the entire overproduction.

With all this intensive search and the advances of science, it is not strange that new pools of oil are being discovered faster than their contents can be consumed.

The increasing amounts of oil produced year by year and the overproduction that has occurred, does not indicate that the unmined reserves are greater than first estimated, but rather that methods of finding are improving more rapidly than consumption is increasing. But this improvement should not cause us to forget that every field opened makes exactly one less that can be found.

It matters little whether the unmined reserves are 9,000,000,000 barrels or twice that. In either event they are distressingly small when the security of our industry and of our nation are both builded thereon.

Hazard Shared by Public

One hazard, then, of finding oil is not altogether that of the wildcatter but is shared by the nation, the consuming public, and the refining and marketing branches of the industry. The comparatively early exhaustion of the American oil fields, after a great industry has built up expensive facilities to use their oil, will prove dangerous for the nation, demoralizing to the public and disastrous to the industry.

It is estimated there is invested in all branches of the American petroleum industry at this time about $9,000,000,000.

If the estimates of unmined reserves are approximately correct, and there is only one barrel of oil in the ground for every dollar invested in the industry, the financiers of the industry had best look quickly to their amortization reserves.

So far as I have stated the matter the chief hazard to the producer in finding oil lies in the difficulty of locating it. Closely following this is the hazard that the supply of oil in the pool or field may not be sufficient to amortize the particular investment in such pool or field.

Price Chief Risk

To the uninitiated, it might appear the hazards are past when the oil is found. Nothing could be farther from the truth. A formidable list of hazards could be cited in connection with producing oil, the hazard of fire, of water, lack of water, everything up to sudden death, but many like those in finding, are mere incidents of operation.

The outstanding hazard is, of course, that of price. It is fundamental that an industry, to be and remain sound, must pay its way, with a reasonable margin of profit.

However, the migratory nature of oil itself, the subdivision of land into small parcels, and the fact that only by reducing it to possession (producing it) can ownership in oil be created, all combine to prevent the law of supply and demand operating with the same degree of smoothness in the oil industry as in others. The producers of coal and iron can decrease their output with no loss in title to that which they leave undisturbed. The farmer can rotate his crops, or let his fields lie idle. But the oil industry has no such means of forecasting the supply or of regulating it when it does start and has many legal obstacles preventing such regulation.

An oversupply must spend itself, as does a flood or tornado, before calm settles down and the devastation can be calculated. The source of supply is like a vast reservoir, with extent unknown, whose flood gates can be raised but not lowered. The supply is directly governed by the accident of new pools and the rapidity with which such pools can be drained after discovery. Consequently, at all times, either an oversupply or a shortage threatens.

Prices react readily to supply, although supply may not always react readily to price. As a result prices constantly move from one extreme to the other. Earning capacity disappears. Property values are wiped out. Bankruptcy faces the industry—many go down—then presto—change, and off we go on another mad whirl of prosperity.

Must Find Million Barrels

More than half the oil produced in the United States today comes from less than 4,000 wells, the other half from more than 281,000 wells. Half of today's production comes from highly flush wells whose decline will be very rapid.

Applying rates of decline which experience has taught are applicable, the wells today producing approximately 2,200,000 barrels, will one year from today be producing not more than one-half that amount. New wells must be drilled that will produce on that date more than 1,000,000 barrels a day, for the consumption then will have increased to the amount of present production. One million barrels a day is more oil than is being produced by Santa Fe Springs, Long Beach, Huntington Beach, Powell, Burbank, Tonkawa and Smackover combined.

Can you imagine sufficient new fields being brought in and developed, or extensions to old fields found, within one year to equal the combined production of this group of record-breaking fields? I cannot.

These figures suggest another peculiarity of the oil industry. A few large wells in any newly discovered rich pool have a demoralizing effect entirely out of proportion to their true economic importance.

There are in the United States today about 285,000 producing wells, 280,000 of which are classified as "semisettled or settled production;" that is, their decline is less rapid than that of the new wells. They are the foundation of the industry—the dependable, visible crude supply.

In the aggregate they represent an immense property value.

Varying Operating Costs

Having a small average production, their operating cost per barrel represents a very considerable percentage of the price received for each barrel they produce.

When a very rich pool is discovered, in which the wells have a large average production, the operating cost per barrel is correspondingly low, so that oil can be sold profitably from these wells at a price considerably below the cost of producing oil from the 280,000 older wells.

This is a temporary condition, for the new wells soon decline, but, while they last, the great bulk of the producing properties represented by the 280,000 wells must, in competition with them, be operated at a price that represents a net loss when development costs are considered.

Another type of hazard is represented by the discovery of new pools more advantageously situated to market. This occurred at the expense of the Mid-Continent Field within this past year. It is an inland field, developed at a great cost, and a very dependable and necessary source of crude for this nation. In addition to its own interior markets, it had seemingly dependable markets on the Eastern Seaboard of the United States and in Europe.

Suddenly, as out of the clear sky, fields more advantageously situated to the Eastern markets, were discovered in California. They produced oil greatly in excess of the amount needed on the Pacific Coast, and this excess sought the markets formerly supplied by the Mid-Continent Fields. This is a temporary condition, but while it lasts the old established markets of the Mid-Continent fields are supplanted by the cheaper oil producer nearer tidewater.

Deficit in Producing

A review of the hazards of producing oil would not be complete without calling attention to the fact that since the beginning of the industry, 70 years ago, approximately $12,000,000,000 have been placed in the legitimate channels of oil field development and operation in the United States.

Only $7,500,000,000 have been returned from the sale of the crude oil produced.

(Continued on Page 126)

WOULD MAKE A. P. I. DIRECTORATE MORE GENERALLY REPRESENTATIVE

A. C. Bedford, chairman of the board of directors of the Standard Oil Co. of New Jersey, believes that no oil company, including its subsidiaries should have more than one representative on the board of directors of the American Petroleum Institute. The following letter read before the councillors of the institute at their executive meeting last week in St. Louis was referred to the board of directors of the institute, and it is expected that the recommendations of Mr. Bedford will be incorporated in the by-laws of the organization, as they met with the approval of the councillors, even though they re-elected Mr. Bedford to the directorate for the coming year contrary to his expressed wishes:

Mr. Bedford's Letter

"December 7th, 1923.

"Mr. W. R. Boyd, Jr.,
"American Petroleum Institute,
"15 West 44th Street,
"New York, N. Y.
"Dear Mr. Boyd:

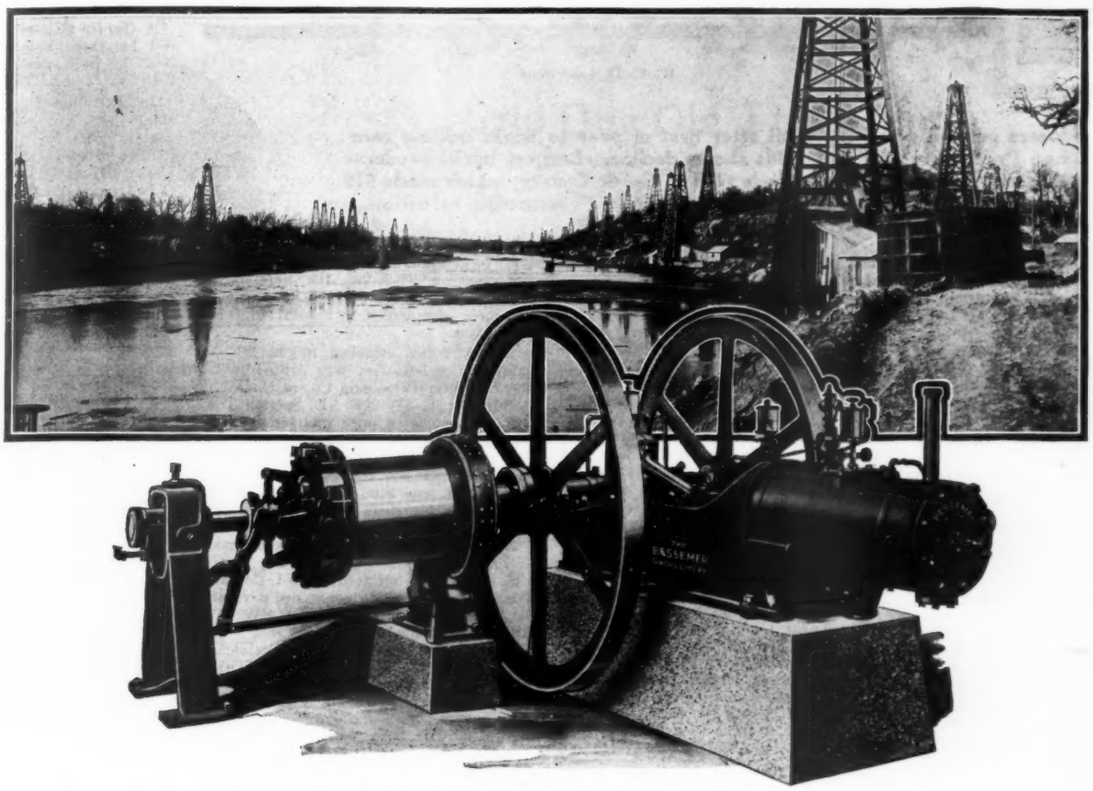
"In looking over the lists of nominations submitted by the councillors for the various vacancies in the board of directors of the Petroleum Institute, to be voted for at St. Louis next week, I noted with gratification the apparent interest taken by the industry in this matter as evidenced by the large number of names which have been submitted.

"There is one principle with regard to the matter that I think should receive the attention of the councillors, though it does not seem to be covered in any way by the by-laws, and that concerns the degree of representation on the board of directors. In the best interests of the institute the widest possible representation of the industry should be had on the board, and in order to get this it is unwise that any one company, including its subsidiaries, should have more than one representative on the board of directors at a time.

"At the organization of the institute the board was substantially identical in membership with that of the National Petroleum War Service Committee, and it followed in consequence that several companies had more than one representative. In my judgment this should be rectified as the terms of office of the directors expire. The Standard Oil Co. (New Jersey), as the board is at present constituted, is represented by Mr. W. C. Teagle and myself. My term of office expires with the St. Louis meeting, and I note that my name has been suggested for nomination in two groups. As I thoroughly believe in the principle above outlined, I desire to ask that those suggesting my nomination be good enough to withdraw my name, thus leaving but one representative of my company on the board of directors, as Mr. Teagle's term of office does not expire this year.

"I note further than in the several group nominations there are names of men who are connected with the same company. If the action of the councillors in the various groups results in their several elections, this would give some companies three, four and five representatives on the board of directors. Hence it seems to me all the more necessary that some such principle as I have outlined above should be observed.

"Yours very truly,
(Signed) "A. C. BEDFORD."



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"It hasn't too many triggers."

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BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

Oklahoma Field Operations

By C. D. Lockwood

Producers generally waiting until after first of year to begin drilling campaigns. Production principal fields shows decline. Largest initial producer of week was Prairie Oil & Gas Co.'s well in Creek County, which made 610 bbls., and then settled to 100 bbls. "South country" attracting attention.

Aside from a slight increase in wildcatting, there is no appreciable change in drilling activities in Oklahoma and it is evident most producers will wait until the first of the year before undertaking any extensive new work. There are many indications, however, that operations will start to expand about that time.

The largest initial producer of the week was brought in by the Prairie Oil & Gas Co. when its No. 3 Kernal, in the SW cor. NW SW, Section 30-14-8, southern Creek County, topped the sand at 3,402 feet and started out at the rate of 610 bbls. after it was drilled only 3 or 4 feet in. It fell off immediately, however, and made only 100 bbls. the third day. The Roxana Petroleum Corp. has shut down its No. 2 Owens, directly offsetting the Prairie's well on the west, waiting for further developments in the latter. The Roxana's well topped the sand at 3,391 feet and, with the bit 2 feet in the sand, had 1,700 feet of oil in the hole and made one flow of 30 bbls.

Reports to the effect that a fine showing of oil was found in the Galvez Oil Co.'s No. 1, SE cor. NE SE, Section 33-29-5, northeastern Kay County, created some stir Saturday, but the showing turned out to be insignificant, the sand which was picked up at 2,989 feet proving to be only 4 feet thick, and the bit going into black shale. It was drilling at 3,075 feet, at last reports.

The Union Petroleum & Supply Co.'s No. 1 Jackson, in the SE cor. Section 2-14-6, eastern Lincoln County, was making 450 bbls. daily after being cleaned out. It was brought in last September for 430 bbls. and has been watched with considerable interest.

Three Fields Decline

The three fields Burbank, Tonkawa and Wewoka were unanimous during the past week in reporting declines in production. The Burbank drop amounted to 2,458 bbls. from the same number of wells that have been producing for several weeks, 1,113 daily average production being 76,423 bbls. Tonkawa increased its wells to 609, a gain of 6 producers over the figure for last week, and that increase held the decline in daily average production down to 1,120 bbls. Wewoka's two new producers could not check the decline in that field and the total daily average was only 13,861 bbls., 1,473 bbls. less than the production of the previous week.

Operations all over Oklahoma fell off slightly during the week ended December 8. The total for that week was 1,277 as compared with 1,287 for the previous week. This was due to a decrease of 5 locations, 8 rigs and 7 drilling wells, while there were 10 more wells shut down. The detailed figures on December 8 were as follows: Locations, 61; rigs, 209; wells drilling, 547; wells shut down, 460.

The "south country" is coming in for its share of attention with the extensive activity that is being carried on in the Graham and Hewitt Fields, and in other Carter County areas. During the past 10 days or so, rains have held up work to some extent there, but wells which were shut down during the proration period and which have resumed drilling recently are continually being brought in, some of them turning into good producers.

In the Graham district, Merrick and others completed their No. 1 Cobb, SE cor. SW NW, Section 5-3s-2w, for 200 bbls., sands being found at 2,805-09 and 2,840-67 feet. Amster's No. 1 Dolman, NE cor. NE SE, Section 25-2s-3w, was flowing 600 bbls. from sand at 2,340-66 feet. In the same section, the Atlantic Oil Producing Co.'s No. 1 Stanton, NW cor. NE NW, was flowing 120 bbls. and also making 4,000,000 feet of gas from sand at 1,939-50 feet, but was not completed. Wirt Franklin's No. 6 Brooks, SW cor. SE SE, Section 24-2s-3w, was completed for 110 bbls. in sand at 2,494-2,508 feet. The Patsy Oil Co.'s No. 7 Palmer, NE cor. Section 6-3s-2w, was also flowing 100 bbls. from sand at 2,752-82 feet, but was not completed.

The Texas Co.'s No. 3 Johnson, SW cor. NE SE, Section 31-2s-2w, was completed in the sand at 2,721-33 feet for 15 bbls., having ripped the casing at that depth after drilling to 3,346 feet. The Graham Trust's No. 11 Bennett, NE cor. NW NE, Section 31-2s-2w, was good for 50 bbls. in sand at 2,217-45 and 2,351-66 feet. Total depth was 2,550 feet.

Output From Two Sands

The Red Oak Oil Co.'s No. 2 Moore, C SW NW SE, Section 31-2s-2w, was producing from two sands, one at 3,004-17 feet, which contained 33 gravity oil, and another at 3,436-40 feet, which had 41 gravity fluid. The two sands together were good for 80 bbls. A 50-bbl. producer was brought in by the Kirk Oil Co. in the No. 11 Bennett, CNL NW NE, Section 31-2s-2w, the sand depth being 2,217-45 feet and 2,351-66 feet. The hole was drilled to a total depth of 2,550 feet.

A well which swabbed 100 bbls. from sand at 2,481-93 feet was drilled in by the Healdton Petroleum Co. in their No. 3 Burrows, C SW NE NE, Section 3-2s-2w. A perforated liner was set at 2,500 feet.

Wirt Franklin was drilling his No. 2 Holden, C NE SW SE, Section 24-2s-2w, at 165 feet, and Simpson and others had a rig built for their No. 1 McCrory, C SW NE NW, Section 34-1s-3w. The Patsy Oil Co.'s No. 9 Hicks-Palmer, C SE SE SE, Section 31-2s-2w, was a rig, and the Schermerhorn Oil Co. and Kirk Oil Co. were rigging up a rotary for their No. 3 Palmer, C SW SW SW, Section 32-2s-2w.

In the Hewitt district, the Wolverine Oil Co. tried to increase the production of its No. 12 Dillard, NW cor. SW, Section 22-4s-2w, by drilling it deeper, but was unsuccessful. It had been producing about 12 bbls. daily from several broken sands from 1,430-1,792 feet, and was drilled through another sand from 1,902-38 feet to a total depth of 1,942 feet. The same company also attempted to deepen its No. 87 Dillard, CSL SW SW NE, in the same section, but lost a string of tools in the hole and was unable to drill by them. The well was making 20 bbls. from sand at 2,055-75 feet and 2,140-72 feet.

The Coline Oil Co.'s No. 36 Jones, NE NE SW, Section 4-4s-3w, was flowing 166 bbls. from sand at 2,496-2,[illegible] feet. Total depth was 2,673 feet. B. A. Simpson's No. 2-A, E. A. Walker, SW SE NE, Section 9-4s-2w, was flowing 450 bbls. from sand at 2,044-68 feet.

In Other Counties

In Pittsburg County, W. C. Newman had a rig on the ground for No. 1 Best, SE cor. Section 31-8-12.

A Garvin County test was being spudded by Donaldson and others in their No. 1 Bell, NW cor. SE, Section 2-4n-3w.

In Pontotoc County, The American Eagle Oil Co. had a 26,000,000-foot gasser in its No. 1 McClure, CSL NW, Section 16-4-6, the sand being found from 1,317 to 1,319 feet.

In Greer County, Neal and others were rigging up a machine for a 1,200-foot test in their No. 1, SE cor. NE NW, Section 3-7-22w.

In Tillman County, H. V. Burton of Tulsa was rigging up a rotary for his No. 1-A Lawrence, NW cor. NE, Section 28-3s-14w.

In Dewey County, A. D. Morton was rigging up cable tools for No. 1-A Elders, C SE, Section 22-16n-18w, a twin to his No. 1.

In Beckham County, Menzie and others abandoned the location for their No. 1 Goldsmith, CWL SW SE NE, Section 15-9-23w.

In Roger Mills County, Martin & Rogers were moving in rig material for their No. 1, C SE, Section 32-12-26w.

In Marshall County, the Humble Oil & Refining Co. abandoned as dry at 2,986 feet, its No. 1 Scott, SE cor. NE SW, Section 22-6s-4e. Another test was being spudded in this county by Lane & Wasson. It was their No. 1 Sacra, C SE NE, Section 18-5s-5e.

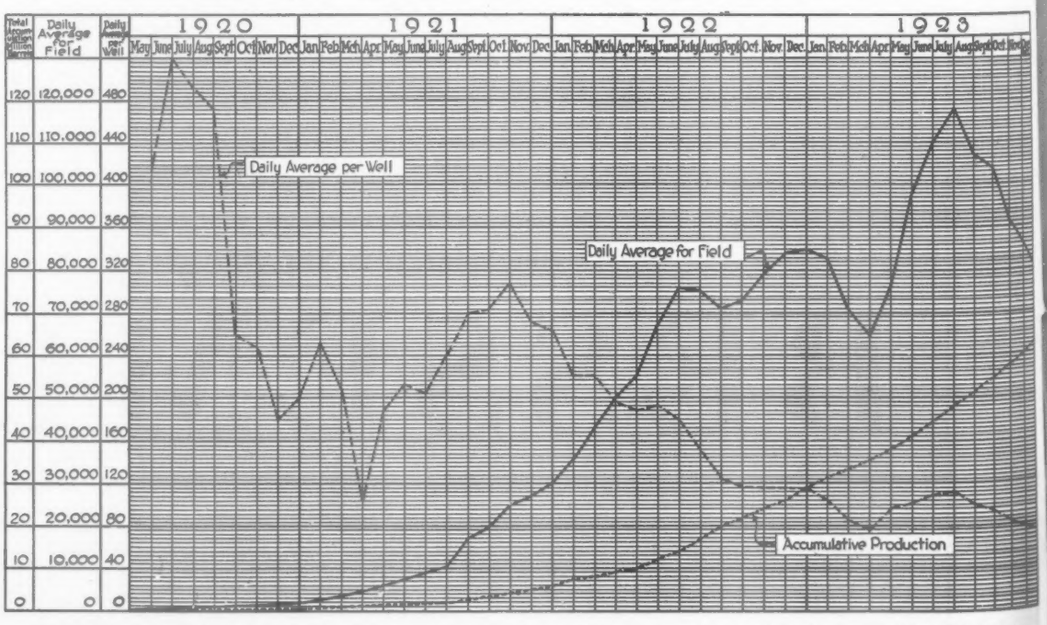
In Bryan County, Patterson & Huffman were spudding their No. 1 Stark, NE cor. SW, Section 34-6s-7e.

In Pawnee County, the Watchorn Oil Co. was skidding the rig on its No. 1 Brown, SW cor. NE, Section 33-23-[illegible] 65 feet to the north. The well was down to 2,170 feet. The same company's No. 10 Miller, NE cor. SW, same section, was good for 40 bbls. on the pump from sand at 2,674-78 feet. The Magnolia Petroleum Co. had a cellar dug and a rig on the ground for its No. 2 Arkeketa, SE cor. NW, Section 9-22-3.

Another wildcat in northern Caddo County found nothing but dust and was abandoned at 3,509 feet. It was Ber-

(Continued on Page 138)

PRODUCING RECORD OF THE BURBANK FIELD



The decline in production shown in the above graph will be abruptly halted when the "gentlemen's agreement" is lifted and drilling is resumed on the 115 wells now shut down in the field, many of them on top of, or near, the sand. There are 22 wells now drilling in the Burbank, 25 rigs up, and 1,113 producers.

"Best Looking Underreamer I Ever Saw"

Bottom of Body — Note Extraordinary Amount of Bearing Surface for Cutters

Said One Old Timer

He had examined the new GUIBERSON Underreamer carefully, and was mainly impressed by three features:

1. GREAT BEARING SURFACE FOR CUTTERS. This feature instantly takes the eye of every practical driller. Note the bottom view of body, at left. Cutters seat in 3 separate places, every one of which has more down-thrust bearing surface than found in other makes. Over 60% of the cross-sectional area of body is bearing surface for the cutters.

2. LARGE SIZE OF CUTTERS. The thinnest part of a GUIBERSON cutter is thicker than the thickest part of some others. These cutters have more stock in them than others, and exceptionally wide cutting edges, minimizing likelihood of key-seating.

3. LESS DANGER OF LOSING PARTS IN HOLE. The chances of losing parts in the hole is reduced almost to zero. Cutters fit into head in such a way as to take strain off of mandrel, spring, or bolt, when the reaming blow is struck. The strain is on the metal in the cutters and body, which can withstand the heaviest duty. The mandrel is forged of chrome vanadium steel and prevents the internal mechanism from being pulled out and lost in the hole.

The GUIBERSON Underreamer was invented by G. A. Montgomery, after long years of experience in building and repairing underreamers and has undergone field tests covering almost a year that we might prove its exceptional merit conclusively, before announcing its addition to the Guiberson line of oil field specialties.

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GUIBERSON

BETTER BE SAFE THAN SORRY

California Field Operations

By L. P. Stockman

Santa Fe Springs decline exceeds estimate. Torrance alone gains in November. U. S. Royalties gets 1,955-bbl. well, Petroleum Securities 1,100, and Sprague Co. 1,200. Jergins has 3,200 producer, deepened, Long Beach. Petroleum Midway gets 1,950-bbl. well at Santa Fe Springs.

LOS ANGELES, Cal., Dec. 18.—California produced 22,397,848 bbls. of crude petroleum in November, an average of 746,595 bbls. per day. The daily average shows a falling off from the October production of 46,192 bbls. a day. The daily average for November is lower than it was last June when 755,570 bbls. a day was produced, but is 112,155 bbls. a day below the record for September, which was California's greatest producing month.

The total stocks at the end of the month of November were 89,003,345 bbls.

There were several new rigs erected and a few wells spudded at Compton during the month but none of those drilling picked up the oil sand. The General Petroleum Co.'s No. 1 Miles & Davis & McMillan's wildcat were expected to pick up the pay sand during the latter part of the month, but cores taken in each failed to show even a color and there is a question as to whether commercial production will be secured in either. The former company's well is down 4,205 feet, at which depth a negative core was taken, while Davis & McMillan's well has reached a depth of 4,302 feet. Both of these wildcats are deeper than Union's No. 1 Callender, which was finished at 4,068 feet. No one seems to be willing to venture an opinion on the probable limits of the field or the general direction in which the structure lies, some believing it to run due east and west, while others claim it will run from northwest to southeast. Something definite should be determined within the next 30 days as the result of several wells being put down on all sides of the Union's discovery well, No. 1 Callender, which continues to make around 1,350 bbls. a day.

Torrance

Development and extension work centered the attention of operators at Torrance where the extension of the field at least another mile to the southeast was the result of the successful completion of No. 1 Dominguez by the Standard Oil Co. Because of its distance from production operators have watched the drilling very closely as the development of many leases depended upon the outcome. It has been known the company expected commercial production as a location was made and a sump started for a second well 500 or 600 feet east of No. 1 Dominguez. The Standard's new well, No. 1 Dominguez, was drilled to 3,798 feet and a string of 8¼-inch casing landed at 3,556 feet. It was finished, with a 6¼-inch and came in flowing 610 bbls. a day of 19.8 gravity oil. While both the production and gravity are far below the expectations of those interested in the southeastern part of the field, it is possible that since the well came in without being swabbed the output may be substantially increased after the well has cleaned itself out. With the completion of the Standard's No. 1 Dominguez, the Sentinel Oil Co.'s No. 1 Joughin has become the center of interest. This well, drilled to 3,675 feet, blew in twice during the week, while being bailed for a water test, but each blowout was of short duration and the gas pressure was not constant enough to maintain a flow.

Should commercial production be secured in No. 1 Joughin, which is about 1,500 feet south and east of the Standard's No. 1 Dominguez, it will prove up considerable acreage and still leave the limits of the field in this direction undefined. Another well of particular importance in this end of the field is the Shell Oil Co.'s No. 1 Keystone, a wildcat being drilled on a lease of several hundred acres. This well shows 3,450 feet of hole and, although the well has not shown any favorable indications, it is possible something of interest may develop within the next 400 or 500 feet. In addition to these wells of major importance, there are several others in this section approaching completion depths, the outcome of which will have a very decided effect on future development work.

Best Well for Weeks

Probably the best well completed in this field for several weeks was the U. S. Royalties' No. 10, which has just been brought in. This well was finished at 3,765 feet and came in flowing 1,955 bbls. a day of 25.8 gravity oil with a cut of 1½ per cent. In addition to this well, which is flowing through a ¾-inch bean under a pressure of 260 pounds, the U. S. Royalties is drilling four others, all located favorably and should be put on production some time during the next 30 days. The company's No. 11 is drilling ahead at 3,490 feet, No. 15 at 3,350 feet, No. 18 at 3,520 feet and No. 16 at 2,900 feet.

The Petroleum Securities Co. (Doheny concern) completed No. 4 Marble during the latter part of the week and the company, with three previous successful completions on this lease, is losing no time in getting additional wells under way. The completion of No. 4 at 3,777 feet left the company free to concentrate its attention on the six remaining wells being drilled. Number 4 Marble finished with a 6¼-inch oil string landed on bottom, was brought in flowing 1,100 bbls. daily. The oil, which tests 26.3 degrees and shows a cut of 1 per cent, is flowing through a ¾-inch bean under a pressure of 225 pounds.

The Southern California Drilling Co. completed No. 1 Hugh during the latter part of the week after drilling it to 3,755 feet and presented the Sprague Oil Co. with a 1,200-bbl. producer. It was finished with a 6¼-inch oil string landed on bottom and the oil, testing 25.2 degrees, is flowing through a ⅞-inch bean under a pressure of 265 pounds. Number 1 Hugh is an offset to the Julian Petroleum Corp.'s well No. 2, now making hole at 3,024 feet. The Union Oil Co., after working for several weeks securing rights of way, has announced that an 8-inch line will be laid from this field to its Wilmington refinery at Los Angeles Harbor. The line will be approximately 5 miles in length and should be running oil around the first of March. Since the Union has only a small production of its own, this move indicates the company will enter the field as a purchaser of crude. The Union is the last of the larger companies to lay a line from the field, although the project has been under consideration for several months.

Long Beach

Production at Long Beach, which has been averaging about 240,000 bbls. daily for over a month or more, shows very little indication of declining to any great extent within the next 30 days. The output at Long Beach has been so consistent during the past few months that it is little short of marvelous the present heavy production could be maintained in view of the fact it is so intensely drilled. Of course the deep sands, discovered several months ago when the production from the upper zones started to decline, have been the chief contributing factor to the field's stability. New production from this deep zone has practically offset the normal decline and the decrease in production from the upper sands due to edgewater encroachment. Deep drilling, of course, has not always been productive of large wells, several having encountered bottom water, which necessitated plugging back a few hundred feet to the upper sands.

The Petroleum Midway Co.'s No. 2 Campbell and the General Petroleum Co.'s No. 4 K. & H., both completed during the current week, illustrate very clearly the uncertainty of deep drilling. The former company was not successful in putting No. 2 Campbell on production at 5,361 feet and was forced to plug back to 4,600 feet. The well was put on the beam at the latter depth and it is pumping 50 bbls. a day of 16.4 gravity oil with a cut of over 10 per cent. The General Petroleum Co. had somewhat the same experience, but was successful in securing a little better production in its No. 4 K. & H., a new well. It was drilled to 5,518 feet, at which depth bottom water was encountered. The well was accordingly plugged back to 5,130 feet and put on production, doing 900 bbls. a day of 21.6 gravity oil. The General Petroleum has two other wells which are wet, both around 5,500 feet, and they will probably have to be plugged back. The company's No. 1 Jasper, which was drilled to 5,657 feet, and No. 5 Scoco, which shows 5,501 feet of hole are the two which tested wet and show evidence of bottom water. These wells are not the only deep drillers which have resulted in unsatisfactory completions during the past few weeks and, while several did not result in commercial production this condition does not hold true throughout the entire field. It is noted, however, that most of the recent completions brought in from below 5,000 feet are showing a much smaller initial production than heretofore.

Petroleum Midway Work

Although the Petroleum Midway (California Petroleum) experienced difficulty with No. 2 Campbell, the company was a little more successful with No. 1-A Walker, a new well, and brought it in flowing 1,550 bbls. a day of clean 24.2 gravity oil. It was finished at 4,600 feet and is flowing through a 1-inch bean under a pressure of 325 pounds. With the completion of No. 1-A Walker, the Petroleum Midway has a daily production at Long Beach of approximately 25,000 bbls. The Shell Oil Co. finished a new well, No. 5 Andrews, a successful deep completion. The well was brought in doing 1,700 bbls. a day of 26.1 gravity oil with a cut of 1 per cent from 5,008 feet. It was finished with a 6¼-inch oil string landed on bottom and is flowing through a 1-inch bean under a pressure of 660 pounds.

The best well put on production during the week was A. T. Jergins' No. 1, located on property leased from the city of Long Beach. This well was completed during the early part of the year as a substantial producer at 3,020 feet and, with the advent of deeper drilling and a recent decrease in production of this well, it was redrilled and deepened to 4,800 feet. Jergins was successful in returning it to production and was rewarded with a 3,200-bbl. well producing clean 26.9 gravity oil.

Santa Fe Springs

A few short months ago the industry was watching the rapid rise of Santa Fe Springs wondering what the maximum production would be, and during the short period since the peak of production was passed in this field the output has dropped from 345,000 bbls. to 195,000 bbls. daily for the week ending December 8. While a rapid decline has been expected at Santa Fe Springs it was not believed that the bottom would fall out as fast as it has. Those, who a few months ago were estimating the daily maximum production, are today trying to compute decline curves for this field, which is dropping faster than its meteoric rise. It is needless to say that any estimates made are subject to changing conditions and the impossibility of estimating future production for any field with any degree of accuracy is shown by comparing present production with estimates made during the early part of September by Joseph Jensen, chief geologist of the Amalgamated Oil Co., and a corps of able assistants. Mr. Jensen at that time estimated that the daily average production of Santa Fe Springs during December would be approximately 252,000 bbls. It can be seen that this estimate, made very carefully, is over 50,000 bbls. too high as it is not believed that the daily average production of

(Continued on Page 122)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Hoxbar, December 4, New York, crude	72,000
San Eduardo (Br.), December 4, Tampico, crude	64,000
Ardmore, December 4, New York, crude	74,000
Atlantic Sun, December 4, New York, crude	82,000
David McKelvy, December 5, New York, crude	75,000
La Brea, December 6, Philadelphia, gasoline	75,000
Agwisea, December 7, Baltimore, crude	87,000
Cape Henlopen, December 7, New York, crude	73,000
Agwismith, December 7, New York, crude	105,000
Japan Arrow, December 7, Providence, crude	96,000
T. J. Williams, December 7, New York, crude	84,000
San Zeferino (Br.), December 8, Tampico, crude	56,000
Coastwise	
Paul Shoup, December 4, Avon, crude	80,000
P. J. Hanna, December 4, Richmond, crude	78,000
W. S. Miller, December 5, Richmond, crude	73,000
S. C. T. Dodd, December 5, Richmond, crude	79,000
Lebec, December 5, Seattle, fuel	66,000
Montebello, December 6, Martinez, crude	75,000
U. S. Tanker Kanawha, December 7, San Diego, fuel	54,000
Lubrico, December 7, Richmond, crude	86,000
Los Angeles, December 9, Martinez, crude	76,000
Exports	
San Ugon (Br.), December 4, London, gasoline	60,000
Foldenfjord, December 4, France, refined	61,000
From San Francisco	
Kewanee, December 5, Linnton, refined	22,000
Warwick, December 5, Portland, refined	30,000
Charlie Watson, December 6, Eureka, refined	14,000
W. S. Porter, December 8, Seattle, fuel	52,000
From Port San Luis	
Los Angeles, December 5, Oleum, crude	72,000
La Placentia, December 5, Oleum, crude	78,000

PERFECTION VAPOR PRESSURE TANKS WOOD, AND BOLTED STEEL TANKS

INDISPUTABLE EVIDENCE NO. 5

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CAMERON REFINING COMPANY
PETROLEUM PRODUCTS
ARDMORE, OKLAHOMA

Aug. 15, 1923

Black, Sivalls & Bryson.
Healdton, Oklahoma.

Gentlemen:

Att. Mr. DeCoster

We beg to advise that the purchase of your 210 Bbl. "Perfection, Combination Flow Tank and Separator" has given very satisfactory results.

Since the installation of this Combination Flow Tank and Separator, our fuel bill has been reduced as much as $50.00 per day, paying for itself the first 15 days of service. It has furnished gas for three Drilling Boilers and one Lease Boiler, a total of four boilers firing from this separator, also a gas engine and three lease dwellings.

Very truly yours,

GSM-m By Gaurd S. Marrin

"Our Fuel Bill Has Been Reduced $50 a Day"

Fifty dollars a day in fuel saving is an item not to be "sneezed at."

That's what the Cameron Refining Company effected last summer with a Combined Flow Tank and Gas Separator as part of a Perfection battery in the Healdton field.

Incidentally it paid for itself in fifteen days!

And that's only one of the several items of superiority over other field storage tanks.

Now that the tide has definitely turned in the oil industry, don't put off a day longer your decision to get in touch with our nearest representative.

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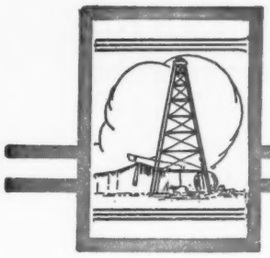
Branch offices in all principal active fields



East Central Texas

By Staff Correspondent.

Powell production averaged 108,709 bbls. last week, a drop of 16,071 bbls. from the average of the previous week. Very little new work was started and there are only 73 drilling wells in the field. Eight new wells show 10,373 bbls. initial production. One dry hole finished.

CORSICANA, Tex., Dec. 17. — The average production of the Powell Field fell from 124,780 bbls. for the week ending December 8 to 108,709 bbls. for the week ending December 15, or 16,071 bbls. per day. The production on Sunday, December 9, was 116,100 bbls.; Monday, 114,360 bbls.; Tuesday, 112,165 bbls.; Wednesday, 108,116 bbls.; Thursday, 105,442 bbls.; Friday, 102,880 bbls.; Saturday, 101,900 bbls.

Eight new producing wells with a total initial production of 10,373 bbls. were brought in in the course of the week. The largest of the week was Parker and others' No. 2-A I. N. Cerf, Smith survey, which got sand at 2,902-50 feet and started off at 6,040 bbls. the first day, making 5,970 bbls. the day following. The others were comparatively small wells outside of the J. K. Hughes Oil Co.'s No. 4 Alexander on the Smith survey, which came in at 2,500 bbls. from sand at 2,850-2,958 feet. The Humble Oil & Refining Co.'s No. 10-A I. N. Cerf, was good for 300 bbls. from sand at 2,867-82 feet, and No. 9-A Cerf at 350 bbls. at 2,912-76 feet, while the same company's No. 8-A R. D. Fleming, Greer survey, started at 618 bbls. from sand at 2,875-2,962 feet. R. D. Brooks' No. 4 I. N. Cerf, Smith survey, was good for 185 bbls. at 2,887-74 feet.

The Mutual Oil Co. had bad luck on the Howell farm, Mathews survey, its No. 7 Howell being dry in sand at 2,885-2,940 feet. It was abandoned and No. 9 will not be drilled.

Other Operations

The Simms Oil Co. in its No. 1 J. A. Boyd, Meador survey, bailed dry at 2,962-75 feet, found lime at 2,975-78 feet and drilled into a sand showing oil and water at 2,978-90 feet. It was plugged back to 2,986 feet and put on the pump and the 20 bbls. of fluid daily was 85 per cent water.

The McMan Oil Co.'s No. 11 P. A. Chapman, Broyles survey, started at 800 bbls. from sand at 2,812-2,866 feet. No. 6 P. A. Chapman, Anderson survey, was good for 1,400 bbls. initial production from sand at 2,811-46 feet.

Garland Kent's No. 10 Fleming, Harris survey, got sand at 2,877-2,960 feet and made 315 bbls. the first day.

The J. K. Hughes Oil Co.'s No. 2 Alexander, Smith survey, found sand at 2,856-2,972 feet and swabbed 800 bbls.

The Atlantic Oil Producing Co. got a shallow gas well in No. 10 Kellum in sand at 1,141-61 feet. It is good for 4,000,000 feet a day, and will be used for lease fuel.

The Humphreys Oil Co.'s No. 54 McKie, Broyles survey, started at 120 bbls. from sand at 2,894-2,942 feet.

Very little new work was started. Nenny & Smith have a derrick up for a test on a 5-acre piece of land on the Goldman farm, Lockhart survey. The Skelly Oil Co. has made a location for No. 8 Keith on the Mathews survey. The Humble Oil & Refining Co. has a derrick up for No. 23 on the Humphreys farm, Smith survey; and the J. K. Hughes Oil Co. has a derrick up for No. 5 Alexander, offsetting the Humble Oil & Refining Co.'s No. 4 Cerf.

At the close of the week there were 6 derricks up in the Powell Field, 42 wells drilling, 24 with pipe set or in the sand and 7 shut down, a total of 79 operations. Each week sees more work completed than work started and it will not be long before the whole field has been drilled up. That the production of the field will be below 100,000 bbls. by the end of the year is almost a surety. It is hardly probable that the completions between now and the end of December will be able to increase or even maintain production, and while the falling off should be gradual from now on it is expected to be steady.

The production of the Humble Oil & Refining Co. given on December 2 as 43,822 bbls. had fallen to 27,062 bbls. on December 12. The Gulf Production Co. fell off from 13,793 bbls. to 8,174 bbls. Humphreys Oil Co. production increased a little, or from 10,793 bbls. to 11,510 bbls. The Skelly Oil Co., which on December 2 was credited with only 895 bbls., had 10,195 bbls. on December 12. Parker and others increased their production from 700 bbls. on December 2 to 5,920 bbls. on December 12.

The Skelly Oil Co.'s Nos. 6 and 7 on the Keith lease have gone to b. s. and water and the production of the lease which had gone as high as 12,000 bbls. dropped to 6,000 bbls. on Sunday, December 16.

The Kirby Petroleum Co.'s production has been bought by the Swiftsure Oil Co., a marketing company with Houston as its headquarters and headed by Mills Bennett. The oil will be run to steel storage at Texas City, the Humble Pipe Line company taking it as a tender shipment.

The field has degenerated to a humdrum existence. Much of the life has gone out of it and many men, especially drilling crews and field workmen, have found that there is no use for them any more in this territory and they have departed for new scenes of operations. Corsicana has felt the effect of the falling off in production and the slump in new work. It has enjoyed the busiest summer in all its existence but it will soon be only a pleasant memory. If the work to be done northeast of the Powell Field results in the opening of new pools, other towns than Corsicana will get the lion's share of the benefits.

Following is the production of the Powell Field as of December 12 and December 2:

PRODUCTION OF THE POWELL FIELD BY COMPANY AND LEASE

	No. Wells	Initial Prodn.	Dec. 12	Dec. 2
Humble O. & R. Co.:				
Blumrosen	4	16,500	242	247
Brown	6	9,280	664	982
Cerf A	6	24,200	577	1,354
Cerf B	2	4,800	1,030	1,593
Crews	10	42,300	1,648	3,022
Davis	16	56,600	3,085	3,701
Fleming A	7	34,500	2,302	7,595
Fleming B	2	7,800	124	185
Gentry A	10	24,800	1,179	1,665
Gentry B	3	9,000	1,020	488
Humphreys	22	51,600	5,778	12,340
Irvine A	5	24,700	329	305
Irvine C	10	36,400	309	None
E. L. Kent	3	2,100	283	256
G. Kent	12	45,700	1,344	2,420
R. I. Kent	1	2,000	72	31
W. J. McKie A.	5	9,400	165	145
W. J. McKie B.	10	45,100	3,034	1,866
Murchison	3	4,150	227	140
Ramsey A	9	22,000	1,684	1,232
Ramsey B	12	35,100	1,890	4,255
Walker	7	11,500	1,076	1,000
Total	165	486,530	27,062	43,822
Tida Oil Co. and Buttram Pet. Corp.:				
Crews	7	67,600	510	240
Bressie	1	5,600	2,685	4,388
Phillips	11	64,200	385	950
Ramsey A	8	53,000	2,735	2,670
Ramsey B	7	28,900	275	675
Thompson	4	4,400	35	25
Total	38	223,700	6,625	8,948
Gulf Prod. Co.:				
Barron	5	17,800	784	882
Barry	1	3,300	abd	...
Blumrosen	3	4,900	155	200
Bush	2	5,700	832	1,315
Christian	6	15,400	280	285
Crews	14	68,300	3,312	7,481
Gentry	7	22,200	491	809
Murchison	8	21,100	1,716	2,130
McKie	1	400	176	190
Smith	5	22,650	134	313
Witherspoon	8	24,700	294	188
Total	60	206,450	8,174	13,793
Humphreys Oil Co.:				
Fair	1	1,250	20	25
Kent	8	7,500	470	300
R. I. Kent	3	12,240	85	43
Burke	1	300	80	...
McKie	61	221,400	10,725	10,275
Kenner	2	600	10	10
Springfield	2	1,700	120	140
Total	78	244,990	11,510	10,793
U. S. Tex. Oil Co.:				
Burke	4	6,200	345	350
Ramsey	4	6,800	65	60
Total	8	13,000	410	410
Skelly Oil Co.:				
Gentry	2	600	0	30
Ramsey	3	5,200	185	165
Keith	4	12,500	10,010	700
Total	9	18,300	10,195	895
Kirby Pet. Co.:				
Fleming	2	12,800	975	1,150
Brown	5	6,800	385	250
McKie	3	5,500	765	375
Total	10	24,100	2,125	1,775
McMan Oil Co.:				
Chapman	10	31,750	1,100	1,[illegible]
Chapman	6	6,400	1,785	[illegible]
Total	16	38,150	2,885	1,[illegible]
Roxana Pet. Corp.:				
Blumrosen	4	4,800	120	[illegible]
McKie	8	20,200	425	[illegible]
McKie A	8	17,530	3,880	[illegible]
Total	20	42,530	4,425	[illegible]
E. L. Smith Oil Co.:				
Keith	8	37,800	448	[illegible]
Ramsey	4	23,300	360	[illegible]
Total	12	61,100	808	[illegible]
The Texas Co.:				
Fleming	11	65,000	915	[illegible]
McKie	8	8,600	345	[illegible]
The Texas Co.-Magnolia Pet Co.:				
Kent	15	52,750	1,393	[illegible]
Total	34	126,350	2,653	[illegible]
Atlantic Oil Prod. Co.:				
Irvine	13	40,200	1,800	[illegible]
Kellum	7	67,500	4,902	[illegible]
Total	20	107,700	6,702	[illegible]
Hughes Oil Co.:				
McKie	2	75	10	[illegible]
Alexander	1	4,800	2,875	[illegible]
Total	3	4,875	2,885	[illegible]
Simms Oil Co.:				
Boyd	2	8,500	2,932	[illegible]
Blumrosen	2	765	320	[illegible]
Howell	1	2,000	930	[illegible]
Rose	3	13,000	2,075	[illegible]
Total	8	24,265	6,257	[illegible]
R. E. Brooks:				
Cerf	5	15,300	960	[illegible]
Empire G. & F. Co.:				
Sweatman	1	1,750	165	[illegible]
Garland Kent:				
Fleming Kent	10	18,950	760	[illegible]
Mitchell & Jones:				
Burke	2	10,000	400	[illegible]
New Domain Oil Co.:				
R. F. Kent	5	2,500	280	[illegible]
Sun Oil Co.:				
Kent	4	11,700	503	[illegible]
Witherspoon Oil Co.:				
Burke	9	20,100	2,120	[illegible]
Mutual Oil Co.:				
Howell	4	21,500	722	[illegible]
Collins & Wheelock:				
G. Kent	2	950	165	[illegible]
Elliott and others:				
Hill	1	2,500	405	[illegible]
Parker and others:				
Cerf	2	8,500	5,970	[illegible]
Texas & Brazos Valley R. R. Co.:				
Right of Way	2	17,500	None	None
Hughes Dev. Co.:				
McKie	13	29,400	590	[illegible]
Barclay & Meadors:				
Cerf	1	2,400	385	[illegible]
Bass and others:				
Gentry	3	600	105	[illegible]
Yoder and others:				
Harvard	1	2,500	1,185	[illegible]
Miscellaneous:				
Springfield and Christian	10	7,000	785	[illegible]
Grand total	555	1,795,190	108,116	[illegible]

Kansas Oil Field News

By C. D. Lockwood

The Russel County wildcat, which all of the producers interested in the Kansas fields have been watching to the exclusion of practically all other areas for the past several weeks, was on the swab at latest reports Monday and will probably be completed at its present depth, 3,004 feet, and put on the pump as soon as tankage is completed. Sand was topped at 2,998 feet. Estimates placed on the production show a great variety of guesses due to the lack of data concerning the sand. Last Saturday it swabbed 186 bbls. and 170 bbls Sunday, and the estimates run both ways from those figures, one reliable scout making his guess at 50 bbls. when the well starts pumping. The Sinclair Pipe Line Co. has pipe on the ground now for its line which will connect the well with the loading rack. Location of this interesting test is in the SW cor. SE, Section 8-12-15w. It is owned by the M. M. Valerious Co. and the Waite Phillips Co.

An extensive drilling campaign is already under way in this area and several companies have assembled blocks of acreage. Two new locations were made during the week in Barton County. They were H. W. Neiswanger's No. 1 Everleigh, SW SE, Section 1-18-12w, and Taylor & Wells' No. 1 Johnson, in the NW SE, Section 24-18-13w. A rig was on the ground for McMahon & Sumpter's test in the NW NW, Section 21-19-12w. S. J. Haynes spudded his No. 1 Taul, NW cor. Section 31-18-12w, and shut it down. The Mountain States Oil Co. shut down its No. 1 Everleigh, SE NE, Section 22-18-13w, waiting for new drill pipe, and the Cheyenne Oil Co.'s No. 1 Soay, SW cor. Section 27-18-12w, was shut down at 3,530 feet.

Operations for the week ended December 8 show a gain of 3 over the figure for the previous week, the total amounting to 219. Of this number 29 were locations, 50 were rigs, 60 were wells drilling and 80 were wells shut down. Comparing these figures with those of the week before, there was a loss of 1 location, 2 rigs, 1 drilling well and a gain of 7 wells shut down.

Magnolia Gets Gasser

A 10,000,000-foot gasser was discovered by the Magnolia Petroleum Co. in its No. 1 Whitty, NE cor. NW SE, Section 29-26-9, south of Reece, in western Greenwood County, from sand at 1,095 feet. This test was drilling for oil at the time the gas was found. It is believed to mark an extension of the Beaumont gas field.

The Newton Oil Corp.'s No. 1 Hawk, NW cor. SE, Section 4-23-2e, Harvey County, scratched the sand at 2,444 feet and the hole filled up with 1,200 feet of oil in 30 minutes. The owners estimate it as good for 250 bbls. It is a south offset to a producer that the same company brought in some time ago.

The Champlin Refining Co. gave its Sumner County wildcat in Section 16-30-1w a 15-quart shot in the sandy lime from 3,538 to 3,563 feet, and it swabbed 20 bbls. It had 360 feet of open hole and was caved in.

A test was drilling at 2,730 feet in Barber County, being Brown & Wisard's

(Continued on Page 124)

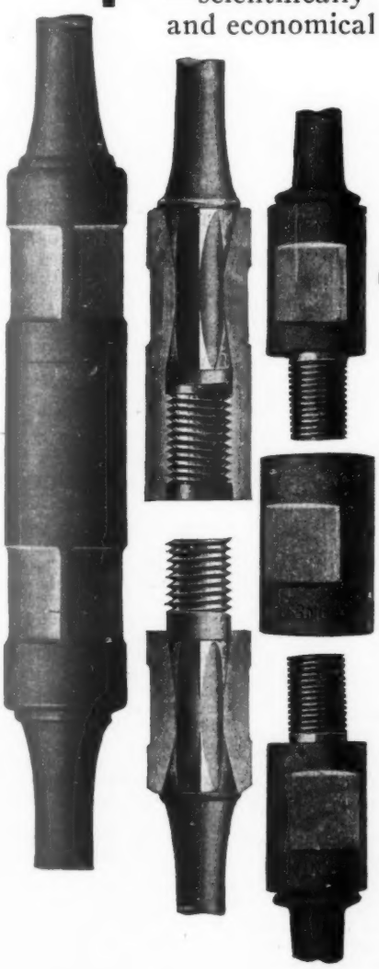
JONES SUCKER RODS have for years been the standard of all American Oil Fields. They give longer life—cut production costs by eliminating frequent breaks and pulling.

We maintain a corps of experienced field men who cover the East, Mid-Continent and California fields—who work with the Oil Producer to the end that JONES RODS may be made to fit every condition of service.

Do not be misled by foolish claims or mis-statements of fact—bear in mind that Sucker Rods as made by JONES are a technical product, designed, made and tested by engineers. The chemist, the steel man, the metallurgist, the engineer and the oil producer have combined their knowledge and skill in perfecting JONES RODS.

The steel used in JONES RODS is made of our special analysis—every heat is checked—every rod is tested.

There are no "pipes"—flaws or weak spots in JONES RODS—scientifically made—evenly balanced—they render long life and economical service under all conditions.



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Wyoming Field Operations

By F. B. Taylor

Runs increase 10,000 bbls., largely through Salt Creek. Deep tests being made to the Lakota sand. Ohio Oil Co. gets two producers, one 125, one 115 bbls. Midwest completes four, one 460 bbls., Wyoming Associated one of 450 bbls. Ohio Oil's Lance Creek well, doing 3,000 bbls., fills all storage.

CASPER, Wyo., Dec. 15.—The big gasser at Wellington, Colo., is still blowing wild and spraying naphtha. The rip in the casing that allowed the pressure to escape into the outer strings opened again while an effort was being made to pump concrete down between the strings and a sleeve brought to be slipped in over the split also failed, so nothing further is being attempted to hold this leak. Officials fear if an attempt were made now to close in the well, it would expand the casing at several other weak points and cause other blowouts.

H. F. Sinclair was a visitor to the Wellington district and reviewed the reports of the Mammoth scouts who have been active in the field. Mr. Sinclair was to have come to Casper for an inspection of Teapot, but owing to storm conditions, it is not known whether he will make the trip. The Sinclair interests are thought to have secured options on several tracts in the Wellington district and a campaign of drilling is to be started in the spring.

Field Reports

The Midwest Refining Co. is down to 3,450 feet on the Neiber Dome test in the Big Horn Basin, Section 13-45-93, and resetting the 8¼-inch casing. The sands are expected below 4,000 feet.

The Skull Creek well in Weston County, near Newcastle, on the eastern side of the State, is being abandoned. It was drilled in an effort to extend the Osage Field southeast or open a new development.

The Baxter Basin well of the Midwest is 2,804 feet and making hole on Section 11-17-104. This well recently changed from a steam to a gas engine for power.

In the Elk Basin Field in Park County, the Midwest well is shut down waiting on fishing tools and a string of tools under a cavey formation at 350 feet.

In the New Mexico country, the Midwest has three wells drilling, one at Ambrosia Lake on Section 13-25-10 that is shut down with a fishing job and one at San Mateo is spudding on Section 14-14-8, while the Jones Dome well, on Section 25-12-23 has reached a depth of 210 feet and is hitched onto the beam.

Colorado Showing

A water well drilling machine, putting down a hole about 13 miles south of Fort Collins, Colo., found a very small showing of gas at about 600 feet on the ranch of A. H. Waltz.

The fourth well being drilled on the Billy Creek structure in Johnson County by the Carter Oil Co. passed through a sand that showed a thickness of 60 feet at 3,700 feet and contained considerable gas. The hole is full of water and an effort is to be made to shut off this water with the 6⅝-inch casing.

The work at Medicine Bow is proceeding slowly, the discovery well that struck a flow of oil last summer and which was drilled by the Southwestern Petroleum Co., is standing at 4,117 feet and making some oil. It has been drilled about 500 feet deeper. A second test is drilling at 2,000 feet a mile away.

The Mutual Oil Co. on the Wallace Creek Dome in western Natrona County, has a rig up and ready for tools, a wildcat test on a new structure, expected to be drilled about 4,000 feet.

Several firms drilling in the Salt Creek Field are reported to be drilling deep tests to see what the Lakota sand contains. The Producers & Refiners recently completed one well through this sand and the hole is now reported as being drilled on down to the Sundance and Tensleep formations. Mose of these wells are being kept as mysteries and the reports handed out convey the idea that they are shut down or fishing or not nearly as deep as the hole.

The Western States Oil & Land Co. is having considerable trouble in the test on that firm's leases in the Lance Creek Field, Niobrara County. The hole was below 3,000 feet when casing trouble commenced and the string has been parted three times, while the bottom of the hole is now about 2,500 feet. An effort is now being made to sidetrack the lost part of the string.

The recent strike at Lance Creek by the Ohio Oil Co., of a well doing around 3,000 bbls. daily has filled all the available storage in the field and at Lusk, the end of the pipe line. The Lance Creek crude is now being shipped by tank car to Casper and other points at the rate of 24 cars daily.

Runs of Crude

Runs of crude in the northwest increased something over 10,000 bbls. daily the past week and from all reports the increase will continue during the coming week. Salt Creek increased its output and is largely responsible.

Salt Creek	126,257
Teapot	4,429
Big Muddy	4,011
Grass Creek	3,190
Elk Basin	1,585
Notches	132
Greybull	20
oRck River	3,200
Lance Creek	3,120
Poison Spider	647
Osage	600
Hamilton Dome	522
Lander	300
Pilot Butte	80
Lost Soldier	5,785
Ferris	100
Cat Creek	4,480
Sunburst	n.d.
Miscellaneous	540
Total	158,998

Summary of Operations

Oil men are predicting a strenuous drilling campaign in the Rocky Mountain region the coming year. To relieve any shortage of oil, the region can draw on a goodly number of producing fields now shut down or producing a nominal amount. Sunburst, in Northern Montana is practically all shut down and no crude is going out of there. Cat Creek, in Montana, is not producing more than three-fourth of its total and Soap Creek is shut down. This is the sum total of Montana.

In Wyoming, the Elk Basin, Grass Creek and Salt Creek Fields are producing at about capacity, but all other operations are either shut down or producing at less than 100 per cent. The potential production of the Rocky Mountain region at present is about 250,000 bbls. daily, while the actual production is around 150,000 bbls.

Colorado is also to receive a lot of attention because of the strike at Wellington of the gas well by the Union Oil Co. There are many untested structures in that State that offer inducement to the wildcatter, but so far the exploration has not brought anything worth while to the operator until the gas strike of a few weeks ago and the repeated failures have tended to scare the wildcatters away.

The reports from the gas well at Fort Collins have nothing new. The leak that developed between the 8- and 10-inch casing has been mudded off. Several prospective operations in northern Colorado are negotiating and among these the Pawnee-Buttes Syndicate is looking for an outfit to drill a test on the Pawnee Buttes Dome in Weld County. One well has been drilled to 1,965 feet, but the hole is considered too small to continue drilling and will be abandoned as it is expected the sands that may contain petroleum lie about 4,000 feet under the surface.

Star Valley

The Vulcan Oil Co., a local firm with holdings in the Star Valley in southwestern Wyoming, is preparing to drill some new wells and operate the old refinery at Leroy, Wyo. This Star Valley Field is the first operation for oil in Wyoming that had a commercial success. The first producing wells were those of the Dallas Field near Lander in the Star Valley; the field was actually developed and a refinery in operation in the early days. The first Oil Well Supply Co.'s store in the whole Northwest was located at Evanston in the Star Valley and the Leroy refinery with a daily charging capacity of 500 bbls. was the refining point for the crude.

The Star Valley Field is an oil production from the Tertiary formation and the wells are drilled to sand lenses in the Tertiary shales. The wells are small and the oil is a very high grade crude that would bring top market quotations if the quantity were sufficient to interest the larger interests. It is believed the oil comes originally from the Cretaceous formations under the Tertiary and did not originate in the Tertiary formation.

Prairie and Indiana

The Producers & Refiners established a sales plant at Salt Lake City last month and is now prepared to serve Utah and Nevada with petroleum products. At the same time the Utah Oil & Refining Co. has a refinery at Salt Lake City. The oil men here are watching the outcome with interest as it is considered by many this move on the part of the Producers & Refiners presages an attack by the Prairie interests on the Standard of Indiana, which owns the Utah Oil & Refining Co. through the Midwest.

It is stated the Producers & Refiners can ship the refined products into Utah and Nevada from Parco, Wyo., where its refinery is located, cheaper than the Utah Oil & Refining Co. can refine crude oil shipped in the same distance; in other words, the Producers & Refiners can lay down gasoline in Salt Lake cheaper than the Utah Oil & Refining Co. can refine it at that point. The Utah plant would have to ship crude the same distance as Producers & Refiners and they pay an overhead to the pipe line for transportation from the field, while the Producers & Refiners owns its own pipe line and also the wells that produce the oil in the first place.

Completions Reported

The Ohio Oil Co. completed two producers in Salt Creek, both on Section 12-39-79 in the central part of the field. One is making 125 bbls. and the other is good for 115 bbls. natural.

The Midwest Refining Co. brought in a good gas well in the rotary hole drilling on the Golden Eagle Dome in Hot Springs County. This new producer is on Section 12-45-97 and is good for about 8,000,000 feet. It will be used to supply gas to Thermopolis.

In the Salt Creek Field the Midwest completed four new wells all to the second Wall Creek sand, the Midwest Oil Co. on Section 19-40-78 found the sand at 2,180 feet and is making 460 bbls. On Section 27-40-79, the Wyoming Associated Oil Co. struck the pay at 2,00 feet and has a producer good for around 100 bbls. On Section 34-40-79 the same firm has a producer good for 450 bbls a day at 1,512 feet and the Mountain & Gulf on Section 11-40-79, found the sand at 2,747 feet and will make an average producer after shooting.

The rotary test in the Salt Creek Field is drilling again after a shutdown waiting for cement to set. A new record for making hole has been hung up by the crew at this well for the rotary, made 750 feet in 48 hours drilling time, passing any former record for fast drilling by any kind of tools in the field. The test is being put down with an Imperial machine.

SAND REEL SUPPORTS ARE POPULAR ABROAD

Twelve Shaffer all-metal sand reel supports were shipped from Tulsa last week to the Lobitos Oil Field, Ltd., in the Peruvian Field of South America. This makes a total of 138 of these outfits that have been sent to the South American fields by the Shaffer Specialty Co. within the last year, the original order having been placed by the International Petroleum Co., a subsidiary of the Standard Oil Co., about a year ago.

Another order was received by the Shaffer Company recently and is now being crated and prepared for shipment. There are numerous regulations to be complied with in the preparation of goods for export to South American countries, among which are the requirements that the articles be crated and bound with iron bands. On each crate, the exact size, and the weight in kilograms and pounds must be marked.

"It is interesting to note," said George W. Shaffer, secretary of the concern, "that the initial order from the International Petroleum Co. came to us through The Oil and Gas Journal, a copy of one of our advertisements having been attached to the order."

PENNSYLVANIA RAISE TO ADVANCE PRODUCTS

OIL CITY, Pa., Dec. 15.—The increases in Pennsylvania grade crude oil prices are expected to result in higher quotations for refined products in the northwestern Pennsylvania refined district during the coming week.

The premium market for Pennsylvania crude continues at 10 cents above the market price despite the price advance announced by the Joseph Seep Agency. Independent crude oil buyers in this city state they will take all the crude offered and pay the 10-cent premium.

During the week neutrals, stocks and wax did better than hold their own. Stocks are especially strong with a good outlook.

Gasoline, fuel oil and kerosene are weaker, especially gasoline. In the motor fuel the reason is self apparent, the seasonable decline in the use of automobiles. The same explanation does not hold in kerosene and fuel oil and local refiners and jobbers are not able to explain.

Some jobbers are expecting a big increase in volume of business. They contend buyers have been holding off in anticipation of lower prices and with a rising market are liable to place their orders immediately.

$200,000,000 EVAPORATION LOSS

THE EVAPORATION THIEF

The best part of your gasoline or crude is being stolen from your tanks. Evaporation is doing it. The loss from this source in the United States is estimated to total at least $200,000,000 a year.

Every 55,000-barrel tank you are using for standing storage is costing you from $1,600 to $15,000 a year in evaporation loss, depending upon the grade of oil stored and the character of canopy roof. A Wiggins Floating Roof would reduce this loss under the same conditions to a range of $400 to $1,300 per annum.

These figures are for **standing** storage. They do not include the losses due to filling and emptying. On a working tank a canopy roof causes losses which are almost unbelievable to those who have not studied the results of tests made by the United States Government.

The following table tells why oil men are becoming keenly interested in the possibilities of the Wiggins Foating Roof to reduce their evaporation losses.

Certainly the oil men in this country will want to give careful consideration to the question of replacing existing roofs with the Wiggins Floating Roof—and they will certainly want every tank inquiry they send out to come to us for a quotation on a Wiggins-equipped structure. To make it easy for oil men to readily acquire full information, we have prepared a bulletin giving detailed information. You may order your copy on the adjoining request slip.

Losses Per Annum in a 55,000-Barrel Tank Handling 10,000 Barrels of Oil a Day:

Loss in Dollars Based on Price of 10 Cents a Gallon

Kind of Oil—	Wooden Roof With Gas Tight Metal Sheathing	Wiggins Floating Roof
Gasoline, 58°	$27,300	$1,260
Light Crude, 37-40°	16,400	840
Mid-Cont. Crude, 33-36°	12,600	630

Request Slip

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2128 Transportation Building, Chicago

Please send me the Report on Fire Tests on Wiggins Floating Roof, and the bulletin to be ready soon.

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Address.....

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HORTON Products include the 5-RING 55, 7-RING 80 and other tanks, THE HORTONSPHERE and Refinery Equipment

Registrants at A.P.I. Meeting in St. Louis

FIRST DAY'S REGISTRATION

The following is a list of those registering up to 5 o'clock Tuesday afternoon for the Fourth Annual Meeting of the American Petroleum Institute:

J. E. Acker, The Financial World, New York, N. Y.
C. L. Ackert, Pierce Oil Corp., St. Louis, Mo.
Larmons Adams, American Met. Co., Erie, Pa.
Richard Airey, New Orleans Refining Co., New York, N. Y.
Taylor Allderdice, National Tube Co., Pittsburgh, Pa.
George S. Allee, Missouri Oil Men's Association, Kansas City, Mo.
L. S. Allen, Sizer Steel Corp., Tulsa, Okla.
A. W. Ambrose, Empire Gas & Fuel Co., Bartlesville, Okla.
C. B. Ames, The Texas Co., New York, N. Y.
James Anderson, Humble Oil & Refining Co., Houston, Tex.
Thos. C. Anderson, Liberty Oil Co., Ltd., New Orleans, La.
W. D. Anderson, The Atlantic Refining Co., Philadelphia, Pa.
B. H. Anglin, Indian Refining Co., Lawrenceville, Ill.
Ralph F. Anschuetz, Daily Oil News Report, Chicago, Ill.
P. R. Applegate, Northern Pipe Line Co., New York, N. Y.
Wm. Jno. Archer, Pan-American Petroleum & Transport Co., New York, N. Y.
Geo. C. Armstrong, Indian Refining Co., Lawrenceville, Ill.
H. T. Ashton, Lubrite Refining Co., St. Louis, Mo.
James Aston, A. M. Byers Co., Pittsburgh, Pa.
P. W. Aular, Titusville Iron Works Co., Titusville, Pa.
Albert Backus, Okmulgee, Okla.
W. E. Badger, The Illinois Pipe Line Co., Findlay, Ohio.
Edw. P. Bailey, National Airoil Burner Co., Philadelphia, Pa.
A. M. Ballard, Sun Co., Tulsa, Okla.
W. W. Ballard, Standard Oil Co., Wood River, Ill.
W. O. Banks, Standard Oil Co. of California, San Francisco, Cal.
O. G. Bantley, Oklahoma City, Okla.
C. R. Barton, Standard Seamless Tube Co., Pittsburgh, Pa.
R. P. Bascom, Ozark Pipe Line Corp., St. Louis, Mo.
Dr. Ignatius A. Bass, St. Louis, Mo.
B. L. Battle, J. F. Allen Co., New York City.
Florus R. Baxter, Vacuum Oil Co., Rochester, N. Y.
John Baxter, Republic Iron & Steel Co., Youngstown, Ohio.
Lloyd F. Bayer, Tidal Refining Co., Tulsa, Okla.
J. E. Beachler (Supt.), Pipe Dept., Wheeling Steel Corp., Steubenville, Ohio.
S. F. Beasley, Sinclair Refining Co., Kansas City.
Amos L. Beaty, The Texas Co., New York.
Leod D. Becker, Oil News & Fuel Oil, Galesburg, Ill.
H. C. Beckman, DeLaval Separator Co., Chicago, Ill.
Fred J. Bedford, Magnolia Petroleum Co., Dallas, Tex.
Wm. J. Bedford, Chicago & Eastern Illinois Ry. Co., St. Louis, Mo.
Arno Behnke, Tulsa, Okla.
Emil J. Beimdick, Western Oil Pump & Tank Co., St. Louis, Mo.
Howard Bennette, Western Pet. Refiners' Assn., Tulsa, Okla.
Wm. G. Benninghoff, Pipe Machinery Co., Cleveland, Ohio.
Annan Benson, Andrew and C. W. Benson, Independence, Kans.
Byron D. Benson, Tide Water Oil Co., New York.
R. O. Benson, Tide Water Oil Co., New York.
Franklin E. Bernsen, Rex Machy. & Supply Co., Tulsa, Okla.
Carl Beroth, Acme Petroleum Co., Chicago, Ill.
Henry D. Billings, St. Louis Tin & Sheet Metal Mfg. Co., St. Louis, Mo.
A. S. Bjerregaard, Empire Refining, Inc., Okmulgee, Okla.
R. L. Blaffer, Humble Oil & Refining Co., Houston, Tex.
B. B. Blair, Waite Phillips Co., Tulsa, Okla.
Richard R. Bloss, International Derrick & Equipment Co., Columbus, Ohio.
Burdette, Blue, V. P., Indiana Territory Ill. Oil Co., Bartlesville, Okla.
E. H. Blum, Atlantic Oil Prod. Co., Dallas, Tex.
G. B. Bogart, The Texas Co., Lockport, Ill.
Paul N. Boggs, Union Tool Co., Torrance, Cal.
F. W. Boltz, National Petroleum Assn., Cleveland, Ohio.
Edmund G. Bordan, Henry L. Doherty & Co., New York City.
O. V. Borden, Purchasing Agents Association, Tulsa, Okla.
A. V. Bourque, Association of Natural Gasoline Mfrs., Tulsa, Okla.
W. M. Bovaird, Bovaird Supply Co., Tulsa, Okla.
G. L. Bowe, Chamber of Commerce, Cleveland, Ohio.
James T. B. Bowles, Tide Water Oil Co., New York City.
A. M. Bowman, Humble Oil & Refg. Co., Houston, Tex.
W. R. Boyd, Jr., American Petroleum Institute, New York.
R. A. Broomfield, Barnsdall Corp., Los Angeles, Cal.
F. J. Bradford, Bradford Rig & Reel Co., Tulsa, Okla.
C. F. Bradley, Gulf Refining Co., Minneapolis.
H. E. Brandli, Carson Petroleum Co., Chicago, Ill.
Edmond C. Breene, Winona Oil Co., Oil City, Pa.
John H. Brennan, Barnsdall Corp., Tulsa, Okla.
H. C. Bretschneider, Mid-Northern Oil Co., Denver, Colo.
Clay Briggs, Empire Gas & Fuel, Bartlesville, Okla.
George F. Brigham, Pres., Commerce Petroleum Co., Tulsa, Okla.
G. M. Brigham, North American Car Co., Tulsa.
Henry H. Brigham, Pres., North American Car Co., Chicago, Ill.
John K. Broderick, Broderick & Bascom Rope Co., St. Louis, Mo.
Chas. H. Brooke, Diamond Rubber Co., Akron, Ohio.
B. B. Brooks, Consolidated Royalty Oil Co., Casper, Wyo.
Stephen H. Brooks, Oil Conservation Engineering Co., Cleveland, Ohio.
Horace H. Brooks, Midwest Oil Co., Denver, Colo.
J. H. Brooks, Republic Supply Co., Tulsa, Okla.
J. A. Brower, Vernon Oil Refining Co., Los Angeles, Cal.
Albert S. Brown, Associated Advertising Clubs of the World, New York, N. Y.
B. H. Brown, Humble Oil & Refining Co., Houston, Tex.
Floyd C. Brown, Empire Companies, Bartlesville, Okla.
S. P. Brown, Hughes Tool Co., Houston, Tex.
R. A. Browne, Penn Oil Co., Oil City, Pa.
H. O. Brumder, Pressed Steel Tank Co., Milwaukee, Wis.
Paul T. Bruyere, Swan & Finch Co., Chicago, Ill.
Dr. A. L. Bryte, Bryte-Nelson Refining Co., St. Louis, Mo.
D. E. Buchanan, Chestnut & Smith Corp., Tulsa, Okla.
Earle Buckingham, Pratt & Whitney Co., Hartford, Conn.
Neil Buckley, Carson Petroleum Co., Tulsa, Okla.
B. J. Burchett, Shaffer Oil & Refining Co., Chicago, Ill.
Edmund Burke, Crane Co., Chicago, Ill.
Geo. A. Burke, Standard Oil Co., Cleveland, Ohio.
Sam F. Burnet, Lacie le Christy Clay Products Co., St. Louis, Mo.
Clyde M. Burnett, Louisiana Oil Refining Corp., Shreveport, La.
Munson Burton, Swan & French Co., New York, N. Y.
A. A. Buschow, Bridgeport Machine Co., Wichita, Kans.
D. S. Bushnell, New York Transit Co., New York, N. Y.
B. E. Byrne, National Supply Co., Pittsburgh, Pa.
C. H. Caldwell, Indian Terr., Ill., Oil Co., Bartlesville, Okla.
H. W. Camp, Empire Refineries, Tulsa, Okla.
A. F. Campbell, Fenwick-Reddaway Mfg. Co., Newark, N. J.
S. E. Campbell, Associated Oil Co., San Francisco, Cal.
Wm. M. Cannady, Shaffer Oil & Refining Co., Chicago, Ill.
L. V. Cantrell, Roxana Petroleum Corp., St. Louis, Mo.
F. B. Capen, The Texas Co., Casper, Wyo.
J. P. Cappeau, J. P. Cappeau Sons, Pittsburgh, Pa.
J. W. Carnes, Sinclair Refining Co., Chicago, Ill.
A. J. Carr, Lufkin Foundry & Machine Co., Houston, Tex.
H. M. Carruth, Canfield Oil Co., Cleveland, Ohio.
C. C. Cartwright, National Supply Co. of Texas, Fort Worth, Tex.
S. G. Casad, Standard Oil Co., San Francisco, Cal.
L. W. Casey, Mitchell, S. D.
H. O. Caster, Empire Gas & Fuel Co., Bartlesville, Okla.
C. H. Chalmers, Chalmers Oil Burner Co., Minneapolis, Minn.
C. J. Chamberlin, National Petroleum Assn., Cleveland, Ohio.
M. A. Chambers, Panhandle Refining Co., Wichita Falls, Tex.
C. W. Chandler, California Petroleum Corp., Los Angeles, Cal.
Frank L. Chase, Lone Star Gas Co., Dallas, Tex.
J. C. Chidsey, American Exchange National Bank, Dallas, Tex.
W. L. Childs, Boykin Machinery & Supply Co., Houston, Tex.
Northrop Clarey, Standard Oil Co., N. J., New York, N. Y.
E. M. Clark, Standard Oil Co., N. J., New York, N. Y.
E. W. Clark, Union Oil Co., Los Angeles, Cal.
John D. Clark, Standard Oil Co. (Ind.), Chicago, Ill.
Jos. B. Clarn, Mid Continental Oil & Gas Assn., Shreveport, La.
J. B. Cleveland, Guarantee Liquid Measure Co., Rochester, Pa.
Frank R. Coates, Henry L. Doherty & Co., New York, N. Y.
I. H. Cohn, National Steel Rail Co., St. Louis, Mo.
Lester B. Colby, Oil & Gas News, Kansas City, Mo.
L. C. Coleman, Cities Service Oil Co., Fort Worth, Tex.
J. D. Collett, Fort Worth, Tex.
D. W. Collingwood, State Geological Survey of Illinois, Urbana, Ill.
Samuel C. Collins, Mariand Oil Co., Ponca City, Okla.
E. F. Connors, Barnsdall Corp., Pittsburgh, Pa.
P. A. Conway, Western Pet. Refiners' Assn., Tulsa, Okla.
F. S. Cook, Prairie Oil & Gas Co., Tulsa, Okla.
Harte Cooke, McIntosh & Seymour Corp., Auburn, N. Y.
J. S. Cooke, American Petroleum Institute, New York.
A. P. Coombe, Standard Oil Co., Ohio, Cleveland, Ohio.
David Copland, General American Tank Car Corp., Chicago, Ill.
J. S. Cordell, Empire Refineries, Inc., Tulsa, Okla.
John B. Corrin, Hope Natural Gas Co., Pittsburgh, Pa.
Arthur F. Corwin, Carter Oil Co., New York.
Eugene Coste, Eugene Coste & Co., Dallas, Tex.
C. E. Couch, Canton, Mo.
R. H. Cox, Morrison Bros., Dubuque, Iowa.
Geo. Coyle, Prairie Pipe Line Co., Tulsa, Okla.
C. T. Crawford, General Petroleum Corp., New York.
David B. Crawford, Parkersburg Rig & Reel Co., Parkersburg, W. Va.
Geo. W. Crawford, 2017 Farmers' Bank Bldg., Pittsburgh, Pa.
John M. Crawford, Parkersburg Rig & Reel Co., Parkersburg, W. Va.
R. A. Crawford, Lone Star Gas Co., Dallas, Tex.
P. C. Crenshaw, Home Oil Co., Chicago, Ill.
J. D. Creveling, Henry L. Doherty & Co., New York.
Philip A. Crosby, Roxana Petroleum Corp., Wood River, Ill.
Geo. B. Cross, Cities Service Oil Co., Ohio, Cleveland, Ohio.
A. S. Crossfield, Union Oil Co. of California, Los Angeles, Cal.
John T. Crotty, Republic Supply Co., Houston, Tex.
J. D. Cudney, Ingersoll-Rand Co., Dallas, Tex.
Walter E. Cuneo, Indian Ref. Co., Chicago, Ill.
R. G. Cunningham, R. G. Cunningham Oil Co., Miami, Okla.
E. F. Curda, Liquid Despatch Line, Chicago, Ill.
W. T. Cushing, San Antonio, Tex.
F. T. Cuthbert, Solar Refining Co., Lima, Ohio.
A. L. Dade, Jr., Shaffer O. & R. Co., Chicago, Ill.
M. S. Darrow, Barber Asphalt Co., Philadelphia, Pa.
W. H. Davidson, Fulton Iron Works Co., St. Louis.
Thos. D. Davies, National Tube Co., Pittsburgh, Pa.
F. H. Daviet, British Mannesmann Tube Co., London, England.
Augustine Davis, Jr., Davis Welding & Mfg. Co., Cincinnati, Ohio.
Edgar B. Davis, United North & South Oil Co., Luling, Tex.
Merrill N. Davis, S. R. Dresser Mfg. Co., Bradford, Pa.
Wm. N. Davis, Bartlesville, Okla.
Andrew W. Deacon, St. Louis Surfacer & Paint Co., St. Louis, Mo.
Wm. T. Deacon, St. Louis Surfacer & Paint Co., St. Louis, Mo.
D. A. Dean, Oil State Ref. Co., Enid, Okla.
H. L. Deming, Lincoln Oil Ref. Co., Robinson, Ill.
W. L. Dempsey, Dempsey Cycle Co., Philadelphia.
R. H. Dennis, Pierce Oil Corp., St. Louis.
W. P. Deppi, Deppi Motor Corp., New York, N. Y.
R. L. Derby, Derby Oil & Ref. Co., Wichita, Kans.
Chas. P. Derleth, Celite Products Co., Chicago, Ill.
James J. Dillon, National Tube Co., Lorain, Ohio.
Henry L. Doherty, Henry L. Doherty & Co., New York, N. Y.
H. P. Dolard, White Star Ref. Co., Detroit, Mich.
J. C. Donnell, Ohio Oil Co., New York.
T. J. Donoghue, The Texas Co., Houston, Tex.
C. G. Dorn, Forest Oil Co., Bradford, Pa.
Forest D. Dorn, Forest Oil Co., Bradford, Pa.
D. B. Dow, U. S. Bureau of Mines, Bartlesville, Okla.
Fayette B. Dow, American Petroleum Institute, Washington, D. C.
National Petroleum Assn., Washington, D. C.

AUTOMOBILE MAN WARNS INSTITUTE TO TELL MOTORISTS STORY OF OIL

By B. F. Kettering
Research Engineer, General Motors Research Corporation
Before the American Petroleum Institute, St. Louis, Mo.

Research wants to know why we are doing what we are doing in the way we are doing it. Is there any sense to it or are we just doing it that way because we did it that way before, and you will be surprised to find out how much of it is being done because we did it that way before.

The next question that research wants to know is this: Are you satisfied with what you are doing today? What can you do to overcome the present difficulties? That is research. If it needs a test tube, buy it; if it needs a balance, but it; if it needs any men, buy them.

Sometimes the greatest handicap to progress in every industry are the men in the industry who think they know about it. Sometimes research is purely a question of firing certain types of mentality.

This petroleum industry is new, as is the automotive industry. We are only 21 years old in the automotive industry. Your business is older than that, and an old automotive man told me not long ago he remembered when you gave gasoline away to any one that would come and get it. The people don't believe that today.

Reducing Loss of Power

The automotive industry made the gas engine, which is simply a hole bored in a block of cast iron and a piston working in it. Today the average efficiency of the motor car running on the streets of St. Louis is about 5 per cent, and when we talk about doubling the number of miles per gallon, it sounds like a rather peculiar statement. But if you will analyze it in terms of 5 per cent of efficiency (and we are only asking for 10 per cent), it is purely a question of the point of view from which you look at it.

We believe it is possible to make motors go twice as far on a gallon of gasoline, and we don't believe that in terms of increasing the efficiency by 100 per cent, but we do believe that we can do it by reducing the loss from 95 per cent to 90 per cent.

Looking at it from that standpoint it is a much simpler problem than doubling the efficiency. In the rapid growth of these new industries we have not had an opportunity to sit down and carefully analyze the science of the thing.

In answer to the question of your president as to why they want to elect one of the automotive industry president of the United States and why they criticize the petroleum industry, I want to answer that question now. If you fellows would spend one-tenth of 1 per cent telling the people of the United States about petroleum like the automotive industry has about automobiles, regardless of whether what we told them was so or not, they would know more about it. The people today who buy your product never see it, and the people who sell it never see it. They don't know your language. They don't know what end point means, they don't know what stock means, they don't know what production means, they don't know what refining means, they don't know anything. Then you expect them to draw an intelligent conclusion about a lot of stuff that you fellows are not sure about.

Advised to Tell the People

I believe the petroleum organization today should go out and tell the American people the truth about petroleum, but don't go out and tell them how good you are, because the people certainly haven't the right idea about the petroleum industry. Tell them the fairy story,

(Continued on Page 120)

Western Petroleum Ref. Assn., Washington, D. C.
C. F. Dowd, Tidal Ref. Co., Tusa, Okla.
R. L. Dudley, Gulf Publishing Co., Houston, Tex.
George Duncan, National Tube Co., National Works, McKeesport, Pa.
H. B. Earhart, White Star Refg. Co., Detroit, Mich.
R. D. Eatewood, U. S. Shipping Board, New York, N. Y.
Saml. B. Eckert, Sun Oil Co., Philadelphia, Pa.
William A. Edsall, J. F. Allen & Co., New York, N. Y.
J. B. Edwards, Tide Water Oil Co., Bayonne, N. J.
Robert W. Egan, The Oil & Gas Journal, Tulsa, Okla.
C. B. Ellis, Gulf Companies, Pittsburgh, Pa.
H. G. Ellis, Wiser Oil Co., Bartlesville, Okla.
C. W. Elstun, Benzo-Gas Co., Kansas City, Mo.
Max Epstein, General American Tank Co., Chicago, Ill.
Chas. Ervin, The Texas Co., New York, N. Y.
J. G. Eury, Henry Vogt Machine Co., Louisville, Ky.
C. R. Ewing, Imperial Oil Limited, Canada, Toronto, Ont.
L. M. Fanning, American Petroleum Institute, New York, N. Y.
F. V. Faulkner, Magnolia Petroleum Co., Dallas, Tex.
H. E. Felton, Union Tank Car Co., New York, N. Y.
Eugene W. Field, Western Oil Ref., Indianapolis, Ind.
H. F. Fisher, American Petroleum Institute, New York, N. Y.
Jno. P. Fisher, Empire Companies, Bartlesville, Okla.
J. C. Fitzsimmons, Standard Oil Company of California, San Francisco, Cal.
C. L. Fleming, Ohio Oil Co., Findlay, Ohio.
C. V. Fletcher, Cities Service Oil Co. (Ill.), Chicago, Ill.
H. W. Fletcher, Hughes Tool Co., Houston, Tex.
R. W. J. Flynn, Standard Oil of New Jersey, New York, N. Y.
Francis B. Foley, U. S. Bureau of Mines, Rolla, Mo.
C. N. Forrest, Barber Asphalt Co., Philadelphia, Pa.
J. A. Forsithe, Gilbert & Barker Mfg. Co., Springfield, Mass.
Chas. E. Foster, Crew Levick Co., Philadelphia, Pa.
H. V. Foster, Pres., Indian Territory Ill. Oil Co., Bartlesville, Okla.
W. H. Foster, Standard Oil Co., Ohio, Cleveland, Ohio.
H. C. Fownes 2nd, Standard Seamless Tube Co., Pittsburgh, Pa.
Wm. C. Fownes, Jr., Standard Seamless Tube Co., Pittsburgh, Pa.
T. D. Fox, Federal Tank Line, Pittsburgh, Pa.
Charles K. Francis, Glencoe, Ill.
W. H. Francis, Magnolia Petroleum Co., Dallas, Tex.
Chester A. Franklin, Wirt Franklin, Ardmore, Okla.
Wirt Franklin, Ardmore, Okla.
Frank B. Fretter, National Ref. Co., Cleveland, Ohio.
Harry D. Frueauff, Henry L. Doherty & Co., New York, N. Y.
W. T. Funk, Carter Oil Co., Denver, Colo.
J. H. Gallaway, De La Vergne Mach. Co., Kansas City, Mo.
R. W. Gallagher, East Ohio Gas Co., Cleveland, Ohio.
H. R. Gallagher, Shell Company of California, San Francisco, Cal.
James H. Gardner, Gardner Petroleum Co., Tulsa, Okla.
E. O. Garrett, Elliott Jones & Co., Inc., San Antonio, Tex.
L. P. Garrett, Gulf Production, Houston, Tex.
Tom J. Garrison, Clement Curtis & Co., Chicago, Ill.
Jno. C. Garrott, Garrott Brass & Machine Co., Houston, Tex.
Victor James Garvin, Simmonds & Simmonds, Chicago, Ill.
W. F. Gates, Prairie Pipe Line Co., Independence, Kans.
T. J. Gay, Gay Oil Co., Little Rock, Ark.
J. A. Geismar, National Supply Co., Toledo, Ohio.
Thos. F. Gorman, Indian Territory Ill. Oil Co., Bartlesville, Okla.
J. A. Germany, Dallas, Tex.
J. E. Gerrodette, J. E. Gerrodette Co., New York, N. Y.
C. E. Gerteis, White Star Ref. Co., Wood River, Ill.
Irwin K. Giles, Atlantic Ref. Co., Philadelphia, Pa.
F. G. Gissler, Conley Tank Car Co., Dallas, Tex.
F. Godber, Roxana Petroleum Corp., St. Louis, Mo.
E. G. Godard, Goulds Mfg. Co., Houston, Tex.
Lester M. Goldsmith, Atlantic Ref. Co., Philadelphia, Pa.
Rome E. Goodwin, Paragon Ref. Co., Toledo, Ohio.
Norman J. Gould, Gould Mfg. Co., Seneca Falls, N. Y.
Herbert Graffis, Petroleum Age, Chicago, Ill.
W. N. Grafins, Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
J. B. Graham, National Tube Co., Pittsburgh, Pa.
B. C. Graves, Union Tank Car Co., New York, N. Y.
Dr. G. W. Gray, The Texas Co., New York.
W. B. Gray, Jarecki Mfg. Co., Tulsa, Okla.
W. H. Gray, National Assn. Independent Oil Prod., Tulsa, Okla.
L. A. Greene, Radio Petroleum Co., Fort Worth, Tex.
Robert C. Greene, Paragon Ref. Co., Toledo, Ohio.
H. V. Greenwood, Baldwin Chain & Mfg. Co., Worcester, Mass.
R. A. Griffith, Sinclair Oil & Gas Co., Tulsa, Okla.
Chas. E. Gross, A. M. Byers Co., Pittsburgh, Pa.
F. D. Grunder, Jones & Laughlin Steel Corp., Pittsburgh, Pa.
C. A. Gustafson, C. A. Gustafson Co., Chicago, Ill.
V. B. Guthrie, National Petroleum News, Cleveland, Ohio.
Stanton A. Hadley McIntosh & Seymour Corp., Auburn, N. Y.
J. G. Hagey, Ollomatic Oil Burner, St. Louis.
R. L. Hague, Standard Oil, N. J., New York, N. Y.
Richard A. Haight, Roxana Pet. Corp., St. Louis, Mo.
H. H. Hall, Standard Oil Co., Cal., San Francisco, Cal.
William C. Hall, Standard Oil Co., Louisville, Ky.
W. J. Hampton, Spang Chalfant & Co., Inc., Pittsburgh, Pa.
Geo. J. Hanks, Tide Water Pipe Co., Ltd., Bradford, Pa.
Harry C. Hanszen, Houston, Tex.
J. P. Hardcastle, Spang Chalfant & Co., Pittsburgh, Pa.
H. M. Harris, Lucey Mfg. Corp., Chattanooga, Tenn.
Thos. Williams Harris, Jr., E. I. Dupont de Nemours & Co., Wilmington, Del.
W. M. Harrison, Star Ref. & Prod. Co., Fort Worth, Tex.
Z. F. Harshton, Imperial Belting Co., Chicago, Ill.
R. S. Haseltine, Guiberson Corp., Dallas, Tex.
Fred K. Haskell, Empire Pipe Line Co., Bartlesville, Okla.
Charles F. Hatfield, St. Louis Publicity Bureau, St. Louis, Mo.
Victor A. Hays, Owen-Osage Oil & Gas Co., Caney, Kans.
A. J. Haslett, Inland Oil Index, Casper, Wyo.
H. G. Hedgecock, Torch Oil Co., St. Louis, Mo.
Alf. G. Heggems, Oil Well Improvements Co., Tulsa, Okla.
C. L. Henderson, Vickers Petroleum Co., Wichita, Kans.
E. J. Henry, Atlantic Refining Co., Philadelphia, Pa.
John P. Herrick, Olean, N. Y.
Carence J. Hicks, S. O. Co., N. J., New York, N. Y.
H. L. Hileman, Joseph Reid Gas Engine Co., Oil City, Pa.
N. G. Hilger, Chicago & Alton R. R., St. Louis.
H. H. Hill, M. S. Bureau of Mines, Washington, D. C.
Johnson D. Hill, Waite Phillips Co., Tulsa, Okla.
R. F. Hill, National Supply Co., Toledo, Ohio.
Frank J. Hinderliter, Hinderliter Tool Co., Tulsa, Okla.
W. M. Horner, Mahre Mfg. Co., Minneapolis, Minn.
T. B. Hoffer, Fensland Oil Co., Fort Worth, Tex.
Harry W. Hoffman, Crane Co., Chicago, Ill.
F. S. Holland, Standard Oil Co. of Indiana, Chicago, Ill.
W. W. Holland, Standard Oil Co., Wood River, Ill.
W. T. Holliday, Standard Oil Co., Ohio, Cleveland, Ohio.
A. C. Holmes, Empire Refineries, Inc., Tulsa, Okla.
R. C. Holmes, Eastern Mfg. Group, New York.
W. K. Holmes, The Texas Co., Tulsa, Okla.
F. E. Holsten, Barnsdall Ref. Co., Tulsa, Okla.
A. M. Honnett, Southwestern Adv. Co., Dallas, Tex.
A. S. Hopkins, Standard Oil Co., Kansas, Neodesha, Kans.
Stanley K. Hornbeck, State Department, Washington, D. C.
George T. Horton, Chicago Bridge & Iron Works, Chicago, Ill.
R. W. Howe, Atantic Oil Prod. Co., Shreveport, La.
W. C. Howland, N. Y. Journal of Commerce, New York.
Grant Hubley, Oil Well Supply Co., Pittsburgh, Pa.
J. H. Hudson, J. H. Hudson Drilling Co., Ardmore, Okla.
Howard R. Hughes, Hughes Tool Co., Houston, Tex.
Palmer Hughes, Clayton Oil & Ref. Co., Dallas, Tex.
Wm. K. Hughes, Continental Supply Co., St. Louis, Mo.
L. V. Hull, Paragon Oil Co., Wichita Falls, Tex.
C. B. Humphrey, Worthington Pump & Mach. Corp., New York.
H. W. Hunsiker, Sizer Steel Corp., Buffalo, N. Y.
F. E. Hurley, Ohio Oil Co., Findlay, Ohio.
L. E. Hutchens, Cities Service Oil Co., Fort Worth, Tex.
G. Sheridan Ihl, Worthington Pump & Mach. Corp., St. Louis, Mo.
W. M. Irish, Atlantic Refining Co., Philadelphia, Pa.
J. W. Irwin, Cleveland, Ohio.
R. R. Irwin, White Eagle Oil & Ref. Co., Kansas City, Mo.
V. E. Jackson, Texhoma Oil & Ref. Co., Wichita Falls, Tex.
H. G. James, Derby Oil Co., Wichita, Kans.
Brooke L. Jarrett, Calorizing Co., Pittsburgh, Pa.
T. B. Jarvies, Jarvies Gas & Oil Burner Co., Kansas City, Mo.
C. H. Jay, Pure Oil Co., Columbus, Ohio.
G. B. Jenkinson, Midwest Refining Co., Denver, Colo.
H. Jensen, Spencer Petroleum Co., Chicago, Ill.
O. W. Johaning, Colcord Wright M. and S. Co., St. Louis, Mo.
Dr. C. O. Johns, Standard Oil Co., N. J., Bayway, Elizabeth, N. J.
L. H. Johnson, Pennzoil Co., Los Angeles, Cal.
Ray M. Johnson, Cameron Ref. Co., Ardmore, Okla.
Percy C. Jones, S. M. Jones Co., Toledo, Ohio.
Roy B. Jones, Panhandle P. & R. Co., Wichita Falls, Tex.
Davis J. Jordan, Williams Ollomatic Oil Burner, St. Louis, Mo.
Robert Jordan, Fort Worth, Tex.
H. Jungerman, C. J. Tagliabue Mfg. Co., Brooklyn, N. Y.
L. D. Jurs, Associated Oil Co., San Francisco, Cal.
N. W. Kane, Tex. Pacific Coal & Oil Co., Fort Worth, Tex.
H. W. Kardell, J. I. Scober, St. Louis, Mo.
E. S. Karstedt, Continental Oil Co., Denver, Colo.
L. E. Katzenbach, Tide Water Oil Co., New York City.
W. M. Keck, Keck Investment Co., Los Angeles, Cal.
J. W. Keller, Jarecki Mfg. Co., Pittsburgh, Pa.
B. F. Kelley, Titusville Iron Works Co., Tulsa, Okla.
F. H. Kemp, Worthington Pump & Machinery Corp., Kansas City, Mo.
C. B. Kennedye, Cross Process Gasoline Products Co., Kansas City, Mo.
Theodore R. Keniston, Chicago Journal of Commerce, Chicago, Ill.
Louis J. Kern, Broderick & Bascom Rope Co., St. Louis, Mo.
J. F. Kerper, Roxana Pet. Corp., Tulsa, Okla.
A. N. Kerr, Rockgas Products Co., Coraopolis, Pa.
J. K. Kerr, Ohio Oil Co., Marshall, Ill.
E. C. Kincade, Gulf Pipe Line Co., Houston, Tex.
K. R. Kingsbury, Standard Oil Co., San Francisco, Cal.
John T. Kirby, Oil Well Supply Co., Pittsburgh, Pa.
T. L. Kirk, Standard Seamless Tube Co., Pittsburgh, Pa.
R. H. Kirkland, Gulf Production Co., Tulsa, Okla.
George P. Kittel, Aeroil Burner Co., Inc., Union Hill, N. J.
Arthur Knapp, The United Gas Improvement Co., Philadelphia, Pa.
George E. Knoop, Liberty Oil Co., New Orleans, La.
Thos. B. Koeneke, Indiahoma Rfg. Co., St. Louis, Mo.
F. W. Krebs, United Alloy Steel Corp., Canton, Ohio.
H. N. Kuechler, Standard Oil Co. of California, San Francisco, Cal.
Herbert W. Ladd, Mountain States Sub-Committee, Pipe Standardization, Casper, Wyo.
C. E. Lamb, Canton, Mo.
W. H. Lambert, Imperial Oil, Ltd., Sarnia, Ont., Canada.
E. A. Landreth, Landreth Production Corp., Breckenridge, Tex.
W. H. Landreth, Pres. Landreth Gasoline Co., Breckenridge, Tex.
Frederick W. Lane, Bureau of Mines, Washington, D. C.
J. P. Laney, Texas-Oklahoma Div., Mid-Continent Oil & Gas Association, Dallas, Tex.
Frank T. Lauinger, Oil City Derrick, Oil City, Pa.
A. B. Lawrence, F. S. Smithers & Co., New York, N. Y.
John P. Leask, Peabody Engineering Corp., New York, N. Y.
H. W. Lees, Dropa Mfg. Co., Cleveland, Ohio.
C. F. Leffler, Gulf Production Co., Fort Worth, Tex.
John S. Lehmann, Wm. S. Barnickel & Co., St. Louis, Mo.
R. F. Leinberger, Blackmer Rotary Pump A, Petoskey, Mich.
W. T. Leman, The Texas Co., Chicago, Ill.
R. D. Leonard, The Atlantic Ref. Co., Philadelphia, Pa.
J. H. Lester, Forest Oil Co., Richburg, N. Y.
E. H. LeTourneau, Standard Oil Co. (N. J.) New York, N. Y.
A. J. Lindsay, Mound City Oil Co., St. Louis, Mo.
Homer R. Linn, American Radiator Co., Chicago, Ill.
Wm. H. Little, National Petroleum News, Tulsa, Okla.
M. S. Lloyd, U. S. Bureau of Standards, Washington, D. C.
Robert McA. Lloyd, Mantle & Co., New York, N. Y.
George D. Locke, Barnsdall Ref. Co., Chicago, Ill.
R. P. Lockhart, Parkersburg Rid & Reel Co., Houston, Tex.
E. W. Long, The Calorizing Co., Kansas City, Mo.
John C. Looker, Bradford, Pa.
A. B. Lort, Paragon Ref. Co., Toledo, Ohio.
F. A. Loury, The Prairie Pipe Line Co., Independence, Kans.
Chas. H. Lown, Imperial Oil, Ltd., Toronto, Ont., Canada.
E. C. Lufkin, The Texas Co., New York, N. Y.
T. F. Lydon, Roxana Petroleum Corp., St. Louis, Mo.
Don G. McAfee, Detroit Independent Oil Co., Detroit, Mich.
W. R. McCain, Purity Oil Co., Springfield, Mo.

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CABLE TOOL JOINTS STANDARDS ENDORSED TO A. P. INSTITUTE

The Committee on Standardization of Cable Drilling Tool Joints reported to the American Petroleum Institute as follows:

The movement was presented to the manufacturers, with the result that 16 of the leading makers adopted as a standard the I. & H. joint.

In order to work out the details, such as sizes, diameters and length of collars, wrench squares, etc., etc., a subcommittee was appointed, composed of one representative from each of the following companies: Oil Well Supply Co., Lucey Manufacturing Corp., Kessleman & Co., Hinderliter Tool Co., Charles Phillips Tool Co., Oklahoma Iron Works, Union Tool Co.

This subcommittee presented its recommendations, which have been adopted by the manufacturers.

The committee presents a copy of the subcommittee's findings and presents for consideration, detail headings only, embodied in the subcommittee's report:

1. That the sizes now made in the I. & H. joint be recorded as follows: (11 different sizes specified).

2. That no change be made in the diameters, length and taper of the I. & H. joint, but that the threads be changed to the seven (7) thread flat, United States form.

3. That the wrench squares and collar diameters remain as they now are. (A total of 33 dimensions).

4. That the lengths of the collars on boxes and pins for stems be (a total of 22 dimensions).

5. That the lengths of the collars on drilling and fishing jars be (a total of 22 dimensions).

6. That the lengths of collars on bits be (a total of 11 dimensions).

7. That the lengths of the collars of boxes and pins on fishing tools and substitutes be (a total of 22 dimensions).

8-A. That the Pratt & Whitney Co., or any other recognized template manufacturer make the master templates from the I. & H. joints and sizes to be furnished by the Oil Well Supply Co.

B. That the master templates be made of a suitable material, hardened and ground to size.

C. The decision of the selection of the template manufacturer be left to the American Petroleum Institute.

Following are recommendations from the subcommittee's report:

That we recommend to the American Petroleum Institute the adoption of the I. & H. cable drilling tool joints as its standard.

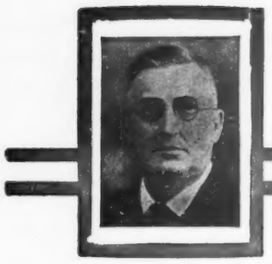
That we recommend to the American Petroleum Institute the ownership of a complete set of master templates to be held by them as the originals, to be used only for rare references or in case of a dispute and that three additional sets of master templates be purchased and placed, one set in the East, perhaps Pittsburgh; one set in the Mid-Continent, perhaps Tulsa; and one set in California, perhaps Los Angeles; with a reliable custodian, testing laboratory preferred, to permit, for a moderate fee, each manufacturer to have his templates tested as often as he things wise, but to be not less than once a year because the burden of keeping the working templates to true form will rest with the manufacturer.

A. That we recommend to the American Petroleum Institute the adoption of a registered trade mark carrying with it the letters A. P. I. for the Standard Cable Tool Joint.

B. That when a manufacturer is prepared and ready to order and use the standard cable drilling tool master templates, he shall apply to the American Petroleum Institute for a certificate of authority to purchase and use such templates.

C. That the American Petroleum Institute shall, upon receipt of an application for a certificate, issue a certificate in duplicate for each size template, the duplicate to be sent with the order to the

(Continued on Page 136)



North-Central Texas Field

By Dan F. Dugan

Decrease of 3,415 bbls. daily in production. Pennant Oil & Gas Co.'s No. 4 Albin, 350 bbls., southwest of Pioneer Pool. Comanche County semi-wildcat indicates producer. Camp Co. has 500-bbl. well in Geraldine Pool. R. M. F. Co. gets two 300-bbl. wells and Sixty-Six Co. one 400.

FORT WORTH, Tex., Dec. 17.—Substantial increases in daily production reported from the various pools in the North Central Texas Field during the past month were wiped out during the past seven days when the runs for that period showed a loss of 3,415 bbls. daily and a total production of 113,805 bbls. as against 117,220 bbls. daily for the previous week.

The decrease was fairly well distributed among the various pools. Only one, the wildcat district, made an increase and it was reported at only 150 bbls. a day. The Electra Pool made the largest loss, 1,570 bbls. daily, closely followed by Burkburnett 1,250 bbls. and the third largest decrease came from the Iowa Park territory, 640 bbls. daily.

This material decrease was in most pools chargeable to the terrific rains and the hard norther that followed, which swept the entire field the greater part of the week.

The only sector of the deep lime producing territory to attract any attention this past week was in the immediate vicinity of the Moore and others No. 2 Ackers producer to the southwest of the Pioneer Pool and east of Cross Plains, in Callahan County. The test receiving most consideration is a semi-completion by the Pennant Oil & Gas Co., their No. 4 Albin, an extension offset to the Moore discovery well. It is estimated to be showing around 350 bbls. a day. This production is from the 2,486-foot sand found a few feet higher, but regular in formation to the Moore producer. Officials of the Pennant Oil & Gas Co. announce another test will be made at once on an offset location as soon as the tools can be released from No. 4 Albin.

Due to the discovery of the shallower gas sands, but little progress has been made on the wells drilling to the west of the Moore well.

The recently discovered 1,400-foot gasser, Stone and others' No. 1 Barr, adjoining the Cross Plains city limits, has been turned into the supply lines of the Cross Plains Gas Co. The owners are completing a rig on the Chess Bar lease, a quarter of a mile southwest, where a deep test will be made, it being their intention to mud off the 1,400-foot strata and test the value of the deeper sands.

It is reported from Sipe Springs, Comanche County, that Fain and others' No. 1-A Gardenshire, semi-wildcat at a depth of 2,850 feet, was shot with 100 quarts. The test responded to the shot and flowed oil for several minutes over the top of the derrick and then bridged, but during the following night it broke through the bridge and put several barrels into the tank. The hole will be cleaned out at once and the test shows every indication of making a commercial producer.

Young County

Development activities in Young are showing a noticeable increase. Several new locations have lately been made and derricks are starting construction in a majority of the pools.

B. F. Weekley's No. 3 McClaren encountered a sand at 2,400 feet last week which produced 5,000,000 feet of gas and 50 bbls. of oil, preparatory to drilling to the 2,600-foot level, where larger producing pay has been found in offset wells.

The Gulf Production Co.'s No. 1-A Hockaday is drilling at 4,155 feet with 2,500 feet of oil in the hole. This well has been flowing 30 bbls. of oil a day between the 6 and 8-inch casing. This flow comes from a 3,200-foot sand which they passed up to reach the deeper pay, from which the No. 1 discovery well produced 2,000 bbls. a day, flush production.

Dudley Miller and others' No. 1 Hughes, Herron City district, was shot with 10 quarts at 2,400 feet, and resulted in a considerable increase in the flow of both oil and gas. The well is now making 6,000,000 feet of gas and 75 bbls. of oil.

The Pomona Valley Oil Co. is rigging up No. 1 Hughes to deepen from 2,000 to 3,000 feet. This well came in several months ago at 540 bbls. a day, later developing salt water trouble.

Due to the price paid for gas (reported at 10 cents a thousand feet) wells drilling in the gas sector of Palo Pinto County are watched with interest. Among the most important is Moore & Sneibold's No. 1 Pruitt, three-fourths of a mile northeast of Mingus, which is drilling around 650 feet. The same company's No. 2 Boles is a derrick in course of construction, and will spud around December 20.

Wichita County-Electra

The week was a quiet one in Wichita County. Very little new drilling was started and whatever was done was on the older leases in the South Electra, Hirschi and Clara districts. With few exceptions little actual drilling will take place until the present condition of the crude market shows signs of a substantial increase in price.

Two semi-completions showing for good producers were reported. On the Waggoner tract, section 33, H. T. C. R. R. survey, the Texhoma Oil & Refining Co. finished No. 11-F at 1,953 feet, showing up for 100 bbls. and some water.

The county's best producing prospect for the week was the Gulf Production Co.'s No. 14 E. A. Dale, Hirschi district, which is swabbing at the rate of 200 bbls. from 1,844 to 1,873 feet.

Bailing has started in T. O. Shappel's No. 1 Jackson, in block 23, Denton County school lands, about one mile north of Holliday. The test, which is in wildcat territory, has been watched by operators due to the encountering of a sand a few days ago at a depth of 1,814 feet. Casing was set and cemented, and drilling one foot deeper produced a strong flow of gas with a considerable show of oil. Operators will slow up for storage and pipe line connections.

The largest producer completed in the county during the week was the John O'Neil No. 3 Saunders in the Clara Pool for 250 bbls. at 1,845 feet.

Reported from Panhandle, Tex., The Texas Co.'s No. 1 Saunders in Gray County, just east of Carson County, is reported showing a wet gas from the top of a sand formation at 2,275 feet. The gas flow in the producing strata was encountered considerably higher than in other tests in that territory. It is some distance north of a test drilled some months ago by Silk, Bullington & Clark. It is shut down and as a precaution oil storage tanks will be erected before drilling deeper.

The semi-shallow field operators of Archer County are more optimistic. An increased demand for crude has caused at least one of the largest purchasing pipe line companies to boast the posted price 15 cents a barrel; also in some instances the smaller refineries are offering premiums above the increase just posted.

The Geraldine Pool furnished another large producer the first of the week with the near completion of the Camp Oil & Gas Co.'s No. 1 Wilson, drilling at 1,594 feet. The cap rock was penetrated and the well responded with a flow estimated around 500 bbls. The well is an offset to the west of the Wilson Farm Oil Co.'s producer which came in about 10 days ago. When a bailer was half way to the bottom it started to flow natural. A line was connected with two 500-bbl. storage tanks, which were quickly filled, and the well was shut in to wait for additional storage.

The Hardesty & Jeffreys No. 1 Parrish, if it makes a well, will extend the Parrish Pool about 4,000 feet to the southeast, it being that distance southeast of the Jetter-Brannon-McGregor well. In the area immediately surrounding the latter producer, activity is intense, with a number of tests drilling. The Hardesty test is reported as showing 500 feet of oil in the hole and is almost certain to make a producer. Its depth is around 1,605 feet. Between the Jetter and Hardesty tests the Texas and Humble companies have some large leases, which they are reported to be getting ready to develop.

The largest producer completed for the week is the R. M. F. Oil Co.'s No. 1 Egbert, which is credited with showing initial 385 bbls. daily at 1,595 feet. The same company's No. 2 Egbert, a short distance west of the No. 1 completion is reported to be flowing and swabbing around 300 bbls. at 1,590 feet.

Two good producers by the Sixty-Six Oil Co. on its lease in Section 4, L. F. Wilson, between the Wilmot and Peterson Pools, are attracting more than casual attention. No. 4 Wilson is swabbing and flowing by heads at the rate of 400 bbls. and No. 5, located to the east of No. 4 is on the pump with an output of 100 bbls. daily. The same company has made location and is rigging up its No. 6 on the same tract.

A derrick is being erected by Burns and Maxson 150 feet each way from the northwest corner of the south 35 acres of the west 85 acres, block 107, L. F. Wilson land, about 2½ miles southeast of the Sunshine Pool. Machinery is being moved to the location and drilling will start soon.

Completions Reported

Completions reported in Burkburnett and Hirschi Pools are the following: Morgan and others' No. 1 Chapman, dry at 1,912 feet; the Northwestern Oil Co.'s No. 1 Eads, 2 bbls. at 1,470 feet; John O'Neil's No. 3 Saunders, 250 bbls. at 1,845 feet; Perkins and others' No. 1 Saunders, 145 bbls. at 1,860 feet; Sun Oil Co.'s No. 24 Hirschi, 100 bbls. at 1,855 feet.

Drilling — Baldwin Bros.'s No. 12-C Kennedy is pulling 5⅞-inch casing to drill deeper, had a water sand at 1,411 feet, total depth 1,419 feet; Brown and others' No. 2 Burnett, drilling at 410 feet; Gulf Production Co.'s No. 15 Dale, drilling in blue shale at 1,515 feet; Howell and others' No. 1 Van Hoss, drilling at 1,820 feet; Kemp and others' No. 6 Eads, at 400 feet; Langford and others' No. 8 Langford, shot with 10 quarts, hole caved, cannot pull casing and shut down for orders at 1,878 feet; Lewis and others' No. 2 George, shut down for cable tools at 2,575 feet; Magnolia Petroleum Co.'s No. 22 Holcomb, drilling at 805 feet; No. 20 Walker, repairing boiler at 830 feet; John O'Neil's No. 4 Saunders, pumped 75 bbls. at 1,850 feet; No. 5 Saunders, drilling at 1,140 feet; No. 6, below 1,000 feet; Perkins and others' No. 2 Saunders, flowing by heads with no gauge and sand at 1,824 feet; Pigg Oil Co.'s No. 17 Hirschi, flowing 200 bbls. from a sand at 1,875 feet; No. 18 Hirschi, standarding and drilling in at 1,824 feet; Sun Oil Co.'s No. 25 Hirschi, drilling in brown shale at 1,705 feet; Welman and others' No. 1 Wolf, drilling at 905 feet.

Wichita-Electra District

Completions—Brewer and others' No. 1 Douglas, dry at 1,112 feet; Buffalo Texas Oil Co.'s No. 4-B Douglas, dry at 1,100 feet; Texhoma O. & R. Co.'s No. 1-J Waggoner, dry at 2,200 feet; Hartford Trust Co.'s No. 6 Burnett, dry at 700 feet; Perkins and others' No. 1 Burnett, dry at 2,000 feet; Texhoma Oil & Refining Co.'s No. 27-A Waggoner, 132 bbls. at 1,920 feet; Knight and others' No. 1 Potts, dry at 2,000 feet.

Drilling — Kruger and others' No. 7 Kruger, drilling at 1,675 feet; Magnolia Petroleum Co.'s No. 7 Douglas, drilling at 95 feet; Memphis Petroleum Co.'s No. 3 Hoanaker, water sand at 870 feet and drilling at 930 feet; Rowe Drilling Co.'s No. 1 Waggoner, pulling casing and will drill deeper at 1,665 feet; Bass and others' No. 6 Waggoner, drilling in brown shale at 1,105 feet; Empire Gas & Fuel Co.'s No. 26 Burnett, drilling out a plug at 1,628 feet; Four States Oil Co.'s No. 7 Jennings, underreaming for 10-inch casing at 940 feet; Fisher and others' No. 3-B Fisher, will set 5⅞-inch casing and test a sand showing some oil at 1,800 feet; Houston Oil Co.'s No. 14 Waggoner, drilling at 1,205 feet; Magnolia Petroleum Co.'s No. 31-A Waggoner, running 10-inch casing at 1,715 feet; No. 5-B Waggoner, picked up a lime formation at 1,670 feet showing rainbows and will drill deeper; No. 1-A Burnett, underreaming 5⅞-inch casing at 2,040 feet; Noel and others No. 1 Waggoner, cleaned out to bottom and drilling in rock at 1,965 feet; Panhandle Refining Co.'s No. 1 Marshall, drilling in blue shale and shell rock at 1,920 feet; Perkins and others' No. 10 Burnett, drilling in brown shale at 1,385 feet; Simms Oil Co.'s No. 14 Burnett, slight showing of oil at 1,525 feet; drilling at 1,590 feet; Carter and others' No. 2 K. & K., testing and pumping a sand at 1,800 feet; Comac Oil Co.'s No. 1 Terhune, drilling at 1,430 feet; Kentucky Oil Corp.'s No. 1 Davis, at 1,685 feet; Parker Bros. No. 1 Love, at 805 feet.

Wilbarger County: Drilling—Adams and others' No. 1 Waggoner, rigging up to drill an old hole, total depth of 735 feet; Robinson and others' No. 1 McCaleb, rerunning 6⅝-inch casing with a new shoe at 2,505 feet; Noble Oil Co.'s No. 1 Waggoner, drilling at 1,005 feet; South Vernon Oil Co.'s No. 1 Stephens will start drilling this week at 1,375 feet.

Archer Completions

Completions—The Texas Co.'s No. 9 Carter Bros., 80 bbls. at 1,375 feet; Cranfill and others' No. 1 Wilson, dry at 1,800 feet; Empire Gas & Fuel Co.'s No. 1-B Wilson, 15 bbls. at 1,400 feet; Featherstone and others' No. 3-B Wilson, 40 bbls. at 1,590 feet; same company's No. 3-C Wilson, 65 bbls. at 1,605 feet; Gwynn and others' No. 5 Mrs. Carter, 75 bbls. at 1,370 feet; Kentucky Oil Corp.'s No. 2 Wilson, 50 bbls. at 1,390 feet; Oil Investment Co.'s No. 3-B Parrish, 30 bbls. at 1,595 feet; R. M. F. Oil Co.'s No. 1 Egbert, 385 bbls. at 1,595 feet; Sixty-Six Oil Co.'s No. 5-B Wilson, 100 bbls. at 1,595 feet; Sunshine

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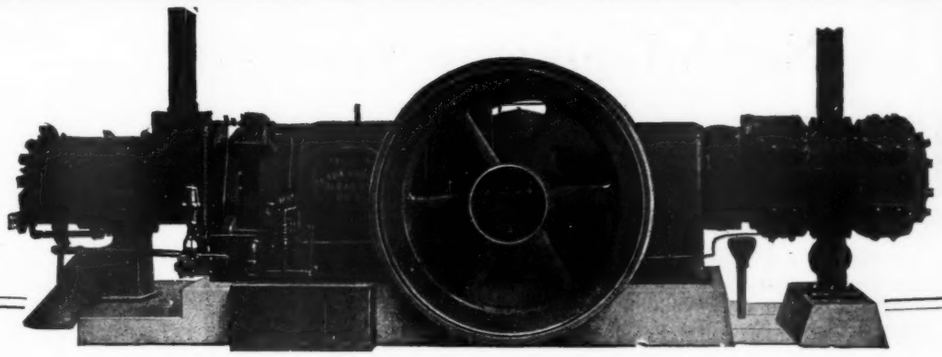

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North Louisiana-Arkansas

By M. L. Vaughn

Losses in all districts but light Smackover. Burton and associates' No. 1 Smith, Union County, makes 200 bbls.; Houston Oil Co.'s No. 2 Reynolds, 250 bbls., and No. 1 Patton, 200; Woodley Petroleum Co.'s No. 1 T. C. Patton, 240, and Lewis & Clark's No. 3 Berry, 200 bbls. in Ouachita County.

SHREVEPORT, La., Dec. 17.—Losses in all except three areas of the North Louisiana and South Arkansas territory were almost overbalanced by a gain in light Smackover crude which resulted in a net decrease throughout the district of 565 bbls. daily. Except in the Haynesville and Bellevue areas the losses are of no interest being merely incidental but the Haynesville decrease of 740 bbls. and Bellevue with 490 bbls. are probably significant of a falling production. The distribution follows

North Louisiana	
Caddo, light	8,585
Caddo, heavy	2,330
De Soto-Red River	5,475
Elm Grove	1,070
Haynesville	22,360
Homer	9,085
Bellevue	6,295
Total	55,200
South Arkansas	
El Dorado	11,190
Calion	7,360
Smackover, light	20,215
Smackover, heavy	78,675
Stephens	3,225
Total	120,665
Total both areas	175,865
Total last week	176,430
Decrease	565

South Arkansas Transfer

Announcement was made that the Lion Refining Co. had purchased the entire holdings of the Oil Operators Trust Co. of Fort Worth, which includes 16 wells in the South Arkansas area with an average daily production of about 3,000 bbls. and 3,000 acres of land under lease or owned in fee, the largest transfer recorded since the Marr holdings were transferred to Haskell interests of Oklahoma.

The move was made in the interest of economy, it being believed crude could be produced at a saving in cost over purchase and the drilling of 10 additional wells to insure capacity operation of the Lion Co.'s 12,000-bbl. capacity refinery at El Dorado is the next move in contemplation. While the precise purchase price is being withheld by officials it is understood it was approximately $800,000.

The Lion Co. has been operating with headquarters at Kansas City but has concluded a lease covering 10 rooms in the new Marks building, at El Dorado, which will furnish accommodations for the pipe line department, the counsel general, the chief accountant and the traffic bureau. Victor H. Smith, president of the company, is giving the arrangement of the offices his personal attention, and occupation of the new headquarters will take place soon.

High winds in the Caddo Lake area resulted in the destruction of five derricks owned by the Gulf Refining Co. and two by the Caddo Central Oil & Refining Co., with a loss estimated at $40,000.

Mississippi Test

H. D. Easton, well known as a geologist in Shreveport, reports developments in Tallahatchie County, Mississippi, where Neil Scroggins and associates will test No. 1 Bardwell, Section 32-23-3, at 2,604 feet in chalk rock in the Selma formation. Mr. Easton says: "After setting the casing we were unable to wash it down below 2,000 feet and unable to pull the drill stem from the hole due to heavy gas pressure. We are preparing to use a lead seal to work down to the bottom and let the well blow in." He states that the Selma, for the discovery of which he is credited, and which crops out on the surface in Leake County, Mississippi, was encountered at 2,260 feet in chalk and continued to the top of the pay sand at 2,604 feet.

Smackover District

Only two producers were completed in the Union County area of the Smackover Field during the past week with 225 barrels of new production. Burton and associates completed No. 1 Smith, Section 19-16-15, flowing 200 bbls. from 2,035 feet, and The Texas Co. put No. 2 J. T. Murphy, Section 22-16-15, on the beam, producing 25 bbls. from 2,060 feet. The Gulf Refining Co. abandoned No. 2 T. C. Murphy, Section 9-16-15, at 68 feet.

There was a slight increase in new operations in developed territory.

The Arkansas Natural Gas Co. is drilling in gumbo at 1,080 feet in No. 6 Cullens, Section 4-19-15. Barnsdale & Foster set 8¼-inch at 2,025 feet in No. 4 J. Murphy, Section 17-16-15. Berfet and others are drilling at 2,655 feet in No. 1 Snyder, Section 2-19-15. Bondurant and others are drilling in gumbo at 1,350 feet in No. 1 Tuberville, Section 9-18-12.

The Constantin Oil & Refining Co. is sidetracking slip in No. S-3 A. Binson, Section 7-18-15, with hole at 1,905 feet. The Corby Syndicate reopened operations on No. 1 Childs, Section 8-16-16 (formerly reported abandoned with casing left in hole at 2,266 feet) and is arranging to deepen. Crawford & Sebastian set 6-inch at 2,225 feet in No. 5 James, Section 6-16-15, completed in May, 1923, with 150 bbls., at 1,996 feet. J. E. Crosby set 6⅝-inch at 1,945 feet in No. 2 Harrell, Section 17-16-15.

Estes and others set 6-inch at 2,165 feet in No. 1 McGraw, Section 1-16-17. The Federal Petroleum Co. set surface 15½-inch in No. 2 W. H. Murphy, Section 22-16-15, and has derrick up for No. 3. In Section 28-17-12 is drilling at 3,100 feet in No. 2 Union Saw Mill.

Ganzell and others are rigging up to drill No. 1 McGraw, Section 7-16-16. Garrett and others are waiting on drill stem at 2,300 feet in No. 1 Robinson, Section 33-18-14. The Gulf Refining Co. set 6-inch at 1,890 feet in No. 1 Clawson, Section 14-16-15; in Section 21-16-15, rigged up to drill No. 1 Jameson; in Section 17-16-15, waiting on standard rig for No. 3 J. G. Murphy, with 700 feet of oil in hole and 59 feet of sand at 2,040 feet; abandoned locations for No. 10 T. C. Murphy, Section 9-16-15, and No. 7 Polk & Ezell, Section 18-17-14; set 6-inch at 2,220 feet in No. 12 Lewis Werner, Section 5-16-16; and shut down waiting on 8-inch for No. A-1 Lewis Werner, Section 35-15-17, now at 2,430 feet.

Harrell and others are drilling at 2,435 feet in No. 1 Tule, Section 11-19-12. The Haviland Oil Co. set surface 10-inch in No. 1 Clawson (formerly reported Jameson) and is drilling in rock at 1,200 feet. Higgins Oil & Refining Co. set 6-inch at 1,855 feet in No. A-3 Murphy, Section 14-16-15, and made location for No. 3 Jameson, Section 21-16-15. Y. E. Hildreth has temporarily abandoned No. 1 Smith, Section 2-16-17, after testing salt water. Hodges and others are shut down at 2,035 feet in No. 1 Murphy, Section 7-16-15, waiting on 6-inch. Houston Oil Co. made location for No. 1 Ballard, Section 21-16-15. Humble Oil & Refining Co. is arranging to swab at 2,000 feet in No. 3 E. G. Murphy, Section 15-16-15, after setting 6-inch at 1,880 feet; drilling at 1,755 feet in No. 4 E. G. Murphy, Section 14-16-15, and has derrick up for No. 2 F. Murphy, Section 3-16-16.

Magnolia Operations

The Magnolia Petroleum Co. has derrick up for No. 1 Fagg, Section 8-16-16, and has No. 5 Moody, Section 8-17-14, waiting orders at 1,960 feet. Nelson and others have renewed operations on No. 1 Childs, Section 17-16-16, formerly reported abandoned at 2,290 feet with casing left in hole and cleaning out to deepen. The Natural Gas & Petroleum Co. has temporarily abandoned No. 1 Primm, Section 1-16-16, at 2,000 feet, to which point they cemented back after testing dry at 2,313 feet, and salt water at 2,326 feet.

Page and others set 6-inch at 1,940 feet and are drilling at 1,975 feet in No. 2 Alphin, Section 23-16-15, and are drilling in gumbo at 1,800 feet in No. 1 Holmes in the same section. The Pure Oil Co. is rigging up to drill No. 3 Craig, Section 15-16-15.

The Quaker City Petroleum Co. is drilling in rock at 1,315 feet in No. 1 Sloan, Section 14-17-15.

Sam Richardson and others set 6-inch at 1,985 feet in No. 1 E. G. Murphy, Section 23-16-15, and 6⅝-inch at 1,860 feet in No. 2 E. G. Murphy, in the same section. The Roxana Petroleum Corp. bailed casing dry after setting 6⅝-inch, and is rigging up to drill in with cable tools now at 1,950 feet.

Sanford and others set 6⅝-inch at 1,935 feet in No. 1 Murphy, Section 8-16-15. The Standard Oil Co. is drilling plug in 4½-inch at 1,915 feet in No. 10 Alphin, Section 11-16-15; swabbing with 9 feet of sand at 2,010 feet in No. 1 Lingelback, and has derrick up for No. 2 Lingelback, both in Section 22-16-15; in Section 5-16-16, drilling in gumbo at 2,200 feet in No. B-3 Saxon. Stark and others are shut down waiting on drill stem at 2,210 feet in No. 1 Little, Section 21-16-12. The Sun Oil Co. is drilling in sand with top at 1,910 feet and the drill at 1,940 feet in No. 4 Hays, Section 3-16-15.

Tarver and others are swabbing to test at 2,260 feet in No. 1 Childs, Section 8-16-16, with 1,000 feet of oil in the hole and 7 feet of sand. The Texas Co. set surface 15-inch and drilled to 1,670 feet in No. 2 Cook, Section 21-16-15. Willroy and others set surface 12½-inch and drilled to 1,100 feet in No. 1 Goodwin, Section 23-16-15. Woodley and others are drilling in shale at 1,900 feet in No. 2 Townsend, Section 6-18-14.

Ouachita County Completions

Eleven producers and two failures were reported from this district last week, adding 1,860 bbls. daily production. With the exception of one well, all the producers were located in the light oil area. This well is in Section 27-15-15 and was completed by the Houston Oil Co. No. 2 Reynolds, flowing 250 bbls. at 2,040 feet.

Dr. Clark completed No. 1 Berry, Section 24-15-17, flowing 20 bbls. at 2,280 feet. In the same section Lewis & Clark brought in No. 3 Berry, flowing 200 bbls. at 2,300 feet. The El Dorado Union Oil Co. completed No. 2 Shirey, Section 30-15-16, flowing 150 bbls. at 2,288 feet. In the same section Giles and others brought in No. 2 Watts, flowing 150 bbls. at 2,265 feet; Lanier and others completed No. 1 Shirey, flowing 100 bbls. at 2,275 feet; the Smith Refining Co. completed No. 1 McRea, flowing 80 bbls. at 2,265 feet and No. 2 McRea, flowing 130 bbls. at 2,260 feet and Solmson and associates completed No. 1 fee, flowing 65 bbls. at 2,265 feet.

The Gulf Refining Co. tested No. 1 J. H. Dawson dry at 3,013 feet, pulled casing and abandoned the well, Section 10-15-18, wildcat territory.

The Houston Oil Co. completed No. 1 Patton, Section 31-15-16, flowing 200 bbls. at 2,255 feet. The Ohio Oil Co. completed No. 2 Reeves, Section 28-15-16, flowing 50 bbls. at 2,260 feet. The Woodley Petroleum Co. completed No. 1 T. C. Patton, Section 32-15-16, flowing 240 bbls. at 2,255 feet.

The Transcontinental Oil Co. struck salt water at 3,015 feet in No. 1 Minor, pulled casing and abandoned the well, Section 20-15-16.

Drilling Operations

A summary of Ouachita County drilling operations last week showed 6 wells waiting on standard rig to pump, 10 temporarily abandoned, 44 drilling, 14 rigs, 22 derricks and 2 locations. Several new wells are noticed in the extreme northwest edge of the light oil territory and one or two in the heavy oil area.

Bray-Hawthorne set 8-inch casing at 1,855 feet in No. 4 LaGrone, Section 25-15-17. The El Dorado Union Oil Co. is rigging up No. 3 Shirey, Section 30-15-16. Giles and others have rig up for No. 3 Watt, Section 30-15-16.

Belief in the possibilities of Caddo Parish is evidenced by additional operations started or to be started.

The Louisiana Petroleum Co. has made location for a test a quarter of a mile south of the La-Tex Community Oil Co.'s well near Vivian and will start drilling No. 1 Brewer, Section 33-23-16, 5 miles northwest of Vivian in the northeast quarter of the southeast quarter of the section.

The Arkansas-Caddo Oil Co. started operations on No. 1 Nickerson, Section 30-19-15, 4 miles south of production, in the Caddo Field, and about the same distance from Brewer & Sewell's No. 1 Sharp, Section 15-18-16, which established the existence of about 15,000,000 feet of gas at 1,756 feet but was drilled deeper to comply with the contract.

Of interest in connection with the Caddo area, close to the western State line, adjacent to Section 6-17-16, is the location made by Fuller & Scott on the Short survey for a well just west of the town of Waskon where drilling is expected to commence in January. A block of 11,000 acres has been leased.

The Gulf Refining Co. is drilling at 1,320 feet in No. 1 Meek, Section 19-15-16; rigging up No. 4 Fincher, Section 28-15-16; No. 2 Solmson stands 700 feet in fluid, 20 per cent salt water at 2,295 feet and arranging to pump, Section 29-15-16; down 1,690 feet in No. 2 Patton, Section 32-15-16 and waiting on standard rig at 2,260 feet for No. 1 W. F. Patton, Section 31-15-16.

Hale and associates have rig up for No. 2 Ward, Section 25-15-17. Hammon and others have derrick built for No. 1

(Continued on Page 64)

The First Full Diesel Used on a Pipe Line was a Worthington

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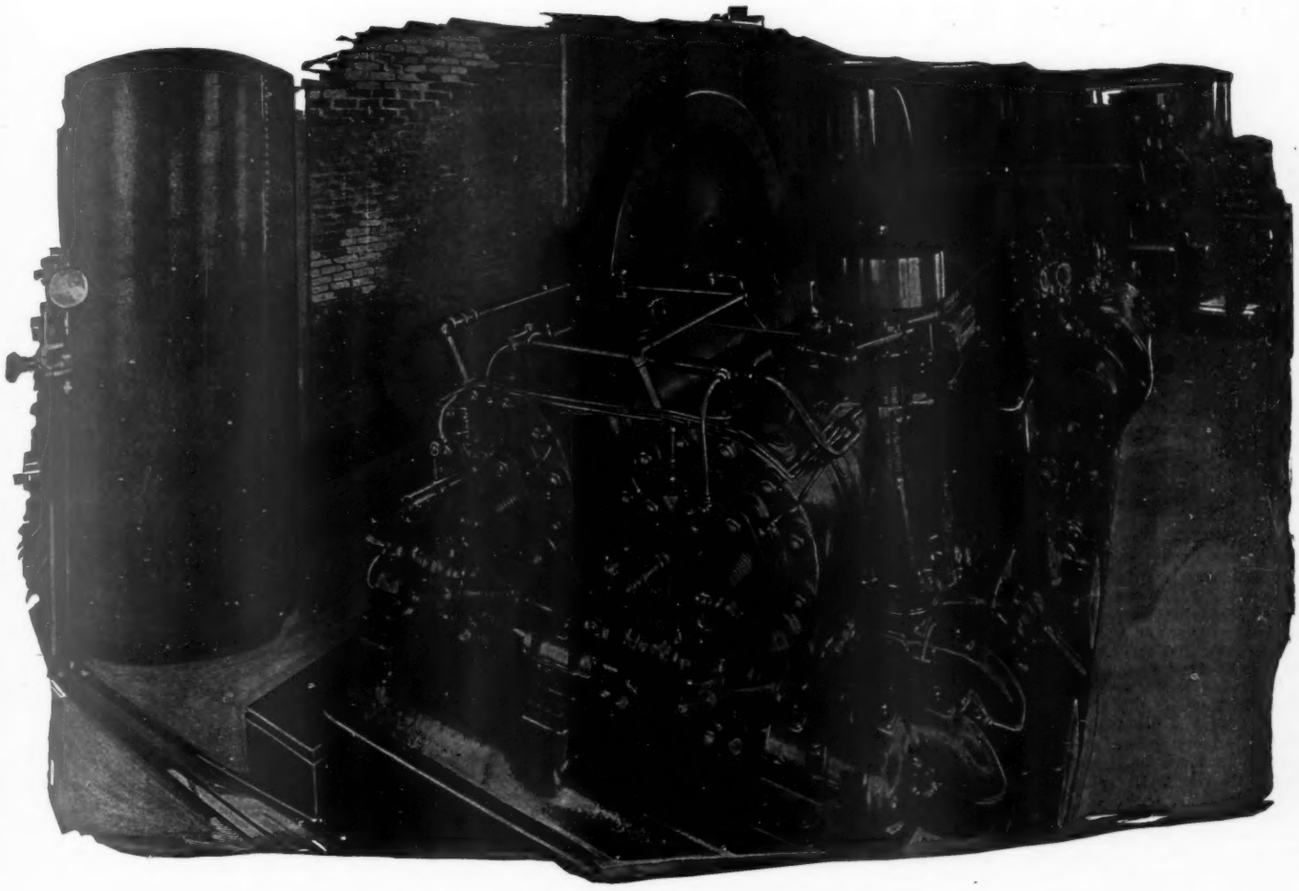

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Gulf Coast Oil Operations

By P. L. McGreal

Republic Production Co.'s No. 73 Dolbear, Hull Pool, flows 800 bbls. Light gravity fields uneventful during week. Decrease of 1,353 bbls. in new production. Gulf Coast-Crown Oil Cos.' joint No. 38 Galliard, Goose Creek, pumps 100 bbls. Yount Lee's No. 3 Taylor, Hull, 100 bbls., 80 per cent oil.

HOUSTON, Tex., Dec. 17.—An 800-bb. well in the Hull Pool was the best completion of the week in the Coastal pools. Operations in the light gravity fields of Luling, Laredo and Somerset were uneventful. Heavy rains again interfered with work in south Texas and Louisiana.

The estimated gross production of the Gulf Coast pools, the Somerset, Laredo and Milam County shallow sands shows a decrease of 1,353 bbls. for the week. The estimate is placed at 92,795 bbls. against an estimate of 94,148 bbls. last week. The estimate for the Coastal pools alone is 86,330 bbls. compared with 87,528 bbls. last week, or a decrease of 1,198 bbls. The estimate for the Luling Field, which is not included in the total is 8,700 bbls.

The division for each pool is as follows:

District—	Bbls.
Batson	1,165
Blue Ridge	620
Barber Hill	325
Dayton	60
Damon Mound	1,945
Edgerly (La.)	385
Goose Creek	13,650
Humble	5,440
Hull	18,350
Jennings	675
Markham	105
Orange	15,700
Pierce Junction	810
Spindletop	870
Saratoga	1,780
Sour Lake	4,700
Somerset and Piedras Pintas	2,790
Vinton	5,825
Welsh and Anse La Bute	75
West Columbia	13,850
Miscellaneous	3,675
Total	92,795

Coastal Completions

In the Hull Pool, the Republic Production Co.'s No. 73 Dolbear is flowing 800 bbls. at 2,440 feet. It is pipe line oil. The Yount-Lee Oil Co.'s No. 3 Taylor is pumping 100 bbls. of fluid, 80 per cent oil at 3,000 feet. The Link Oil Co. is putting No. 4 Rivere on the beam at 3,475 feet and the Mecom Oil Co.'s No. 3 Mecom is preparing to test at 3,775 feet, after deepening.

In the Orange Pool, the Atlantic Oil Producing Co.'s No. 2 Hager and the Orange Petroleum Co.'s No. 4 Chesson are both pumpers after being worked over. The former at 3,565 feet and the latter at 3,820 feet. At West Columbia, the Ajax Oil Co. worked over No. 2 Williamson at 2,730 feet and is resetting strainer. The Humble Oil & Refining Co.'s No. 1 T. L. Smith on the northwest side of the dome, is testing 20 feet of sand and shale at 3,200 feet. It is an old hole. The Newman Drilling Co.'s No. 1 Lee in the Humble Pool is a 20-bbl. well. In the Goose Creek Pool, the Gulf Coast-Crown Oil Co.'s joint No. 38 Galliard is pumping 100 bbls. at 2,800 feet. The J. R. Copeland Oil Co.'s No. 1 on Spillman Island, across the bay from the pool, is bailing at 4,680 feet. The Ada Bell Oil Co.'s No. 64 Parafine in the Batson Pool is bailing at 1,245 feet.

Drilling Operations

In the Hull Pool, the Republic Production Co.'s Nos. 26 and 43 Dolbear on the east side are working over; No. 74 is rigging and a derrick is standing for No. 72. The Gulf Production Co.'s No. 10 Phoenix is drilling at 2,425 feet and around on the south side of the dome the Sun Oil Co.'s No. 9 Carr is below 1,900 feet. On the southwest side, The Texas Co. and Vacuum Oil Co.'s No. 1 Hannah joint test is sidetracking at 2,780 feet. The Gulf Production Co.'s No. 12 Hannah is rigging on the west side and on the northwest side, the Humble Oil & Refining Co.'s No. 1 Sterling is drilling at 1,235 feet and No. 2 Taylor at 1,255 feet. The Monarch Oil & Refining Co.'s No. 2 Miller is below 3,350 feet and No. 3 Miller around 3,550 feet. The Houston Production Co.'s No. 7 Taylor is below 2,345 feet. The Yount-Lee Oil Co.'s No. 4 Taylor is drilling at 2,110 feet. The same company has a derrick up for No. 5 Stengler on the north side and the Empire Gas & Fuel Co.'s No. 4 Lynd on the northwest is waiting for a rig to start drilling.

In the Orange Pool, the Rycade Oil Co. has locations for Nos. 1 and 2-D State land on the banks of Cow Bayou, as offsets to the Sun Oil Co.'s No. 2 Brown. The Brownie Babbittee Oil Co. is rigging No. 1 Brown as an offset to the north, flowing 2,000 bbls. of fluid, 1,000 bbls. of which was oil. The company is working over No. 1 Whitehead. On the north side of the dome, the Sun Oil Co.'s No. 1 Ritter is shut down after setting 6⅝-inch casing waiting for the cement to harden.

In the Blue Ridge Pool, the Mutual Oil Co.'s No. 1 Booth, deepened to 3,950 feet is flowing 60 bbls. by heads. Same company's No. 1 Bute is drilling at 2,745 feet and The Texas Co.'s No. 11 Robinson is below 1,145 feet. The Texas Co. is starting No. 2 Settegast between Bue Ridge and Pierce Junction. It is about 5 miles across the prairie between those pools.

In the Saratoga Pool, the Rio Bravo Oil Co.'s No. 83-B is drilling below 923 feet and Paggi Bros. No. 3 Louis is around 1,370 feet. In the Sour Lake Pool, The Texas Co.'s No. 268 fee is working over at 1,535 feet. The Rycade Oil Co.'s No. 2 McFaddin, off the Spindetop Dome, is drilling around 3,515 feet. In the Markham Pool, the yRcade Oil Co.'s No. 1 Myers is at 3,185 feet and the same company's No. 2 Hudson is at 2,245 feet.

South Louisiana Pools

In the Vinton Pool, The Texas Co.'s No. 23 Gray is going on the beam at 2,175 feet, as is the Edgerly Petroleum Co.'s No. 1 Vincent at 2,600 feet. The Gulf Refining Co.'s No. 30 Star is bailing at 2,450 feet. The Just Oil and Refining Co.'s No. 2 Lyons is drilling at 1,800 feet. Marrs McLean's No. 5 Gray is around 3,470 feet. The Vinton Petroleum Co.'s No. 11 Harmony is at 1,175 feet and No. 12 Rescue below 1,180 feet. The Gulf Coast Oil Co.'s No. 7 is rigging. A derrick is up for the Siess Syndicate's No. 8 Green.

In the Jennings Pool, The Texas Co.'s No. 26 Latrielle is pumping 50 bbls. at 2,000 feet. Fred I. Getty is starting No. 1 Sturtevant, Section 27-10-4 in Jeff Davis Parish. The Yount-Lee Oil Co. is drilling No. 4 at Hackberry Island. The Vacuum Oil Co.'s test near Lake Charles is still idle. The Johnson Bayou Prospecting Co. (Scott, McManus and others) is setting 6-inch casing below 200 feet in its shallow test in Cameron Parish. The Gladys Belle Oil Co.'s No. 1 Raines in Sabine Parish, was abandoned at 3,890 feet, and the Gulf Production Co.'s Nos. 13 and 14 Hager fee are drilling on the east side of the bayou at 3,890 feet and 3,356 feet respectively. The Rycade Oil Co.'s No. 3-A State land is drilling around 4,716 feet. In addition to the two wells mentioned, the Gulf Co.'s No. 3 Pevito is deepening at 4,000 feet and No. 5 is drilling at 455 feet. They are on the west side of the bayou, offsetting the Sun Oil Co.'s No. 2 Brown. No. 6 Kishi-Lang on the northwest side is below 1,400 feet. A derrick is up for No. 8 Winifree.

The Humble Oil & Refining Co.'s No. 8 Winifree is below 4,375 feet and Nos. 18 and 20 Chesson are deepening at 3,810 and 4,235 feet respectively. The Sinclair Oil & Gas Co.'s No. 6 Granger is deepening and the Supreme Oil Co.'s No. 1 Jackson is sidetracking at 3,785 feet. The Mutual Oil Co.'s No. 6 Chesson is deepening at 3,980 feet and No. 8 Chesson is fishing at 4,275 feet. The Orange Petroleum Co.'s No. 5 Winifree is drilling below 3,200 feet and No. 3 Berwick at 3,465 feet. Northeast of production the Sun Oil Co.'s No. 1 Kato is below 3,675 feet and the American National Oil Co.'s No. 1 Winifree, 1 mile northeast of production, is around 3,700 feet.

Goose Creek

In the Goose Creek Pool, the Gulf Production Co.'s No. 6 Chapman-Bryan is deepening at 4,335 feet. Its No. 2 Hirsch in the bay is drilling at 2,415 feet and No. 28 Beaumont, also in the bay, is around 350 feet. No. 8 Paddock is drilling at 2,000 feet. The Humble Oil & Refining Co.'s No. 10 Tabb is at 3,780 feet and No. 53 Smith below 2,025 feet. No. 24 Peninsula is rigging with a location for No. 1 on Hogg Island. The Gulf Coast-Crown Oil Co.'s joint No. 31 Galliard is working over. Newton and Gilcrest's No. 4 Gillette is sidetracking.

At West Columbia, The Texas Co.'s No. 52 Hogg is working over at 3,725 feet, as is No. 1 Abrams. The Sun Oil Co. is working over No. 2 Robertson at 3,050 feet. At Damon Mound, 10 miles to the northwest, the Sinclair Oil & Gas Co.'s No. 8 Becker is below 2,200 feet and No. 9 Jackson working over. Cullen and others' No. 3 Ward is shut down.

At Pierce Junction, the Humble Oil & Refining Co.'s No. 6 Fitzsimmons is making 300 bbls., 60 per cent water at 3,510 feet. It came in last week.

In the Humble Pool, the Burley Oil Co. is drilling No. 30 Landslide, the Callahan Oil Co. Nos. 1 and 2 Slaughter and the Gulf Coast Oil Co. one in the old shallow sand section. Both The Texas Co. and Galena-Signal Oil Co. are working ove old wells on the Stevenson.

Outside of the pools, The Texas Co.'s No. 1 Promybek, southwest of Brenham, bailed dry at 1,440 feet and is being deepened. In Culbertson County, T. W. Owens abandoned No. 2 Jones at 460 feet and Gossert and others No. 1 at 3,175 feet.

At Big Creek in Fort Bend County, Rich associates are deepening No. 1 Ahlers after bailing hot sulphur water. The Gulf Production Co.'s No. 7 Davies showed nothing at 725 feet. The Gulf Co. is drilling two sulphur tests there. The same company is drilling No. 2 Trustee on Boling Dome in Wharton County.

Milam County Shallow Sands

In the shallow sand section of Milam County, the Texas Petroleum Co.'s No. 1 Phillips is rated at 20 bbls. at 1,000 feet. It is 5 miles west of Rockdale. In the same region, the Plunkett Oil Co.'s No. 2 Van Goten is making 15 bbls. at 1,010 feet. Roundtree and others are drilling No. 3 Fee and Drake and others No. 1 Coulter. The Texas Petroleum Development Co. has started No. 6 Neihaus. Jennings and others No. 1 Branch, 2 miles west of Rockdale is below 450 feet. Fritz Fuchs No. 1, just outside of Rockdale is below 850 feet and the

(Continued on Page 60)

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., Dec. 15.—In the Foremost Field, southern Alberta, Canadian Western Natural Gas Co. No. 3 has been completed to the gas sand with an estimated daily capacity of 2,000,000 feet. This is the third producing well drilled in the new Foremost Field in the course of a few months. The development south of Foremost was started this season, with three tests on the strength of the gasser drilled some 10 years ago by United Oils, Ltd., of Calgary. Canadian Western No. 1 developed an estimated gas production of 17,000,000 feet a day, and No. 2 completed a few weeks ago, is good for about 8,000,000 feet a day. With No. 3 at 2,000,000 feet the aggregate open flow is now 27,000,000 feet a day. No further drilling will be done this year, but steps will be taken promptly to lay a pipe line about 35 miles to connect with the main line from the Bow Island gas field to Calgary. The actual laying the line will take about 60 days, but some preliminary work will be necessary, so about 4 months will be required after the financing is arranged.

In the Barnwell Field, Canadian Western Natural Gas Co. No. 8 has been finished with an estimated production of 500,000 feet a day. The top of the gas sand was reached at 2,150 feet. No. 7 has been abandoned; and drilling activities for the season have been discontinued. The new Barnwell producer is being connected with the pipe line. The Canadian Western Natural Gas Co. will take about 8,000,000 feet a day from the Okotoks Field and about 5,000,000 feet a day from the Bow Island Field to meet the peak load this winter.

In the Delia district, southern Alberta, the Prairie Natural Gas Co., which has a small production of gas from a shallow sand in No. 1 well, near Craigmyle, is drilling No. 2 at 280 feet. The company will utilize its production for the manufacture of carbon black.

There has been little definite information regarding the Sanctuary Oil Co. (Thompson Syndicate) test on Section 9-5-8w-4, in Pakowki Lake District. This test is down about 2,445 feet and still unfinished. A large gas flow was encountered around 2,110 feet and gas in smaller quantities at 2,147 and 2,190 feet

(Continued on Page 118)

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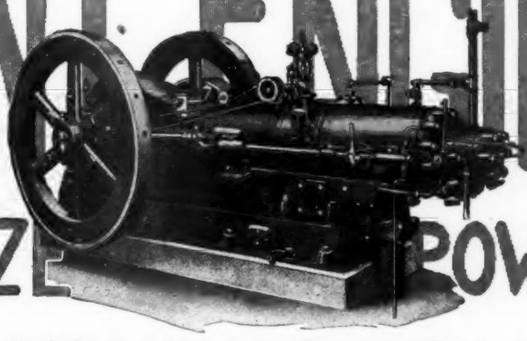

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Fields of the Central West

By Whit

Buckland Oil Co. gets 36-bbl. well in Auglaize County, Ohio, and Ohio Oil Co. 34-bbl. pumper southeast of Cygnet, Wood County. Wildcat in Gibson County, Indiana, dry. Mid-Egypt Co. has well estimated 35 bbls. in Jackson County, Illinois. Union Oil & Gas Co. gets two producers in Big Sandy.

FINDLAY, Ohio, Dec. 17.—Another quiet week prevailed over the Central West fields, as completions were few from all fields excepting the Central Ohio gas area.

The organization of the Crude Oil Association of the Pennsylvania grade fields is attracting wide attention among oil men operating in all the fields east of the Mississippi River, and if such a thing could be done it would be a wise move for every operator in Illinois, Indiana, Kentucky and Tennessee to make an effort to become one of them to help the good cause along. The wells are getting small and something must be fathomed to keep things moving and the advertising of the product to the world at large certainly should improve the development and help along in the call for that quality of crude.

The old Lima Field of northwestern Ohio with all of its undeveloped areas and inside locations enough to keep the drill moving for many years to come, is now very quiet, and has been since the rains and colder weather came.

Only four wells were reported for the week in the field. The most important completion was the test by the Buckland Oil Co., on the northwest corner of the Alice Dingeldine farm, Section 3, Logan Township, Auglaize County, for a production of 36 bbls. In Douchouquet Township, same county, R. S. Cheuvront drilled a 1-bbl. pumper in No. 4, on the southeast corner of the Meckling and others' farm, Section 36.

Southeast of Cygnet, in Bloom Township, Wood County, the Ohio Oil Co. completed No. 47 on the Northwestern Ohio Natural Gas Co.'s lands, Section 29, for a 34-bbl. pumper. The top of the Trenton was found at 1,095 feet and drilled 255 feet in for a total depth of 1,350 feet, about the usual depth of the third sand pay.

In Marion Township, Allen County, the Federal Oil Co. drilled a dry hole in No. 3 on the Ed Youngpeter, Section 11.

Indiana Field

The closely watched wildcat on the southwest corner of the W. F. Chapman farm, Section 24, White River Township, Gibson County, in southwestern Indiana, 3 miles east of Mt. Carmel, Ill., and drilled by the Eagle Oil Co., is now completed to a depth of 2,410 feet and given up as a dry hole. This location was considered an ideal one for opening a new pool north of the Princeton Field, but it does not condemn a very large area of territory, and the spring may see more test work.

Another dry hole was added to the Princeton Field when Gray and others drilled in their test on the southwest corner of the W. VanMeter farm, Section 31, Center Township, Gibson County, to a depth of 1,735 feet and failed to find a commercial well.

Illinois Field

The older sections of the Illinois Field are rather quiet. In Martinsville Township, Clark County, John Arthur and others drilled in a dry hole in a test on the Lewis Webb, Section 19, at a depth of 1,410 feet, failing to find oil in the stray sand formation. In Honey Creek Township, Crawford County, Craig, Lowrie and others' No. 6 L. M. Highsmith, Section 11, pumped 10 bbls. at 954 feet.

In Waterloo Township, Monroe County, the Kaskaskia Oil Co.'s No. 7 Dena Acker 81 acres, Section 11, pumped 4 bbls. from a depth of 447 feet.

The Mid-Egypt Oil & Gas Co. should have much credit for its development of what may prove one of western Illinois' best fields, known as the Ava-Campbell Hill area, in Jackson County, south some distance from the Waterloo Field. This company has kept going along in a busy way for a few years and is furnishing gas to several municipalities as well as securing a nice oil production and has a pipe line of its own from the field to a siding along the railroad near Ava, shipping its own crude. Few outsiders have invaded the fied and the work can be credited almost entirely alone to this company. The company has drilled a few dry holes but has secured a large number of excellent gas wells and close to a dozen oil wells.

In Ora Township, Jackson County, the Mid-Egypt Oil & Gas Co. got a nice gas well at a test on the Morris farm, Section 6, and a dry hole on the Smith in the same section. On the Gerberding farm, in Section 14, Bradley Township, same county, this company has a test with all the earmarks of the best oil producer yet found in the field, looking like it would make from 35 to 40 bbls., with only a few feet in the pay sand. It will extend the producing area of the oil end some distance. Another well is being started on the same farm. This company also drilled in No. 2 on the Fromeling, Section 11, Bradley Township, and while it is a commercial producer, does not make the showing the Gerberding well does. This company's No. 9 on the Carter farm, Section 12, is reported dry.

Considerable acreage has been leased by outsiders and reports are that the spring season will see some extra help in an effort to open the field.

Eastern Kentucky

According to advice from the Big Sandy area of eastern Kentucky work will shut down to a large extent during the winter. Only two completions are reported from the Big Sandy division and both are the Union Gas & Oil Co.'s. Its No. 3 on the Harrison Bailey, in the North Weir Field of Lawrence-Johnson Counties, showed a flush of 15 bbls., and No. 4 E. H. Skaggs, 20 bbls. flush. This company started only one well during the week, which is No. 8 Martha Kelly lease, has shut down No. 25 on the P. P. Holbrook and is drilling in the lime and sand with less than half a dozen wells that it expects to have on power before the close of the month. Much wildcatting is being planned for counties to the south and Martin, Floyd, Pike, Harlan and others will get their share of the tests.

Central Ohio Field

In Central Ohio it looks as though work will continue through the winter, unless it gets too severe. The Mansfield-Shiloh Field, the latest new section, is showing wonderful strides, eight new wells being started during the week, and several wells due. Bad roads and inclement weather have held up completions.

In the Shiloh Field, Cuppler & Ozier of Akron got a surprise in No. 1 Peter Willett farm, Section 2, Cass Township, Richland County, which came in with a volume of 1,500,000 feet of gas in the shale at the shallow depth of 460 feet. Ben Hart's No. 2 Maringe farm, Section 1, same township, showed 150,000 feet, and C. E. Ozier's No. 4 Wattman farm, Section 1, showed 450,000 feet. The well on the Willett farm extends the field a mile to the west and south. Two dry holes were found during the week at Planktown, about 2 miles south of the pool. Four wells were started within a radius of 160 acres, all by different parties and all came in dry, Brown, Henline & Warner's No. 2 D. Guthrie, Section 13, Cass Township; Bert Hancock and others' No. 1 A. Nelson farm, same section, and two drilled by J. Wiltz on the A. F. Kinsel, and Mitchart & Noah on the Boyd Hammon, both in Section 13.

There are now four wells drilling inside the village of Shiloh. Ashland parties are taking over the four farms owned by Dick Brothers, several miles southwest of Shiloh, and will drill three tests. Dempsey Brothers of Cleveland, owners of half a dozen of the old wells southwest of Shiloh are contemplating drilling several deeper at once. These were just drilled to the top of the lime and have been running gas for 18 years. About 15 years ago the Shiloh Gas Co. drilled a well to the Trenton Rock about a mile southwest of Shiloh on the White farm. This well had a mighty good showing of oil in the Trenton, also a nice gas showing in both the lime and Clinton sands, found at 2,100 feet. There is much talk and rumor of a new pipe line from Shelby and paying 30 cents per 1,000 feet. Well informed parties say a few more wells coming in west or south this will become a reality.

The new drilling wells started in the Shiloh Field are Green Brothers' No. 1 White farm, Section 1; C. A. Sandals' No. 1 Barnes, Section 11; Davidson & Co.'s No. 1 F. McBride, Section 3; Hulse & Koontz' No. 2 Nugent, Section 1; Hayes, Noble & Co.'s No. 1 Dr. Noble, Section 1; C. E. Ozier and others' No. 6 Seeman, Section 1; J. H. Harmon's No. 1 H. A. Downend, Section 15, all in Cass Township, Richland County, and Davidson and others' No. 1 Maring, Section 6, Bloomingrove Township, same county.

Other Completions

In Brown Township, Knox County, the East Ohio Gas Co. drilled an average shallow sand gas well at No. 2 Frederick Mots, Section 11. This company also drilled one of the best gas wells found for some weeks in No. 5 J. B. Date farm, Section 17, Hanover Township, Ashland County.

Caugherty Brothers' test on the Lewis H. Jones farm, Section 24, Westfield Township, Medina County, was dry. In Litchfield Township, same county, J. F. Hogan and others' No. 3 on the W. Anderson, Section 1, was dry in the shallow sand at 300 feet. In York Township, the Logan Gas Co.'s No. 2 Allen E. Weiss, Section 13, is an average gas well.

In Grafton Township, Lorain County, the Ohio Fuel Gas Co. drilled in a very nice gas well at a test on the George Schaffer 122 acres, Lot 67, and another good gas well at a test on the Richard Putt farm, Section 29, Columbia Township, same county. It looks as though Lorain County had been overlooked for its gas for some years.

In Chippewa Township, Wayne County, the East Ohio Gas Co. brought in a nice gas well in its second test on the Pazquale Volpel farm, Section 20. In Cannan Township, same county, the Ohio Fuel Gas Co.'s No. 1 O. G. Pinkley, Section 11, and No. 2 D. V. Rowe, Section 16, were light gas wells. The Central Ohio Gas Co. also got a light gas well at No. 1 H. E. Geyer, Section 2. In Plain Township, the Hawk Gas Co. drilled a dry hole in a second test on the C. Hardesty 73 acres, Section 8, and the Logan Gas Co. brought in a light gas well after a shot in No. 1 C. C. Hoffman, Section 36.

In Benton Township, Hocking County, the Logan Gas Co. hit a nice gas vein when No. 4 on the J. L. Mauk 120 acres hit the pay in the Clinton sand. This well is in Section 13. In Perry Township, same county, the Ohio Fuel Gas Co. drilled a dry hole in No. 1 Alice McClelland, Section 14.

The Central Ohio Gas Co. made an excellent gas strike at a test on the Thomas Connor farm, Section 17, Monroe Township, Holmes County.

In Washington Township, Jackson County, the Ohio Fuel Gas Co. found a dry hole in No. 2 Stephens Tripp, Section 12, and another in No. 1 A. S. Dempsey farm, Section 30, Milton Township, same county.

USE OF WOOD BARRELS URGED UPON INDUSTRY

By A. C. Hughes

Field Representative, Associated Cooperage Industries of America

(Before Group Session on Transportation of Oil, American Petroleum Institute, St. Louis)

The process of readjusting oil barrel specifications to meet the everchanging conditions within the industry, and the Governmental requirements for the shipment of oil and gasoline in wood barrels, have proceeded under the orderly supervision of the American Society of Testing Materials and the Bureau of Inflammables. The entire subject of wood barrels for oil and gasoline was thoroughly scrutinized for inaccuracies, which has brought about the adoption of a standardized wood barrel for these commodities that carries the stamp of approval of the I. C. C.

There is a good deal of interest in consuming industries on the question of leakage and evaporation. In a broad way, we know one way to solve the problem. If the wood barrel for oil and gasoline has been constructed according to grade rules and specifications approved by the I. C. C. and the gauge of steel hoops used has met the requirements of riveting, driving and tensile strength, if the interior of the barrel has been glued according to set standards, the fundamental principles that we advocate on barrel usage have been complied with, the wood barrel itself will be found dependable for efficient utilization.

Realizing the importance of studying the problem of wood barrel utilization to get authentic information on the value of the different wood species of timber, innumerable tests have been made on selected material at the Forest Products Laboratories, Madison, Wis. Out of that study we have developed some recommendations for the grading of barrel timbers based on the character of the commodity the barrel contains.

Discard Those Pipe Slips!

Pipe slips are a thing of the past in efficient oil well operation—like cranking an automobile, we didn't mind it when we didn't know any better.

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Automatic Link Release Type

Speed Up Work
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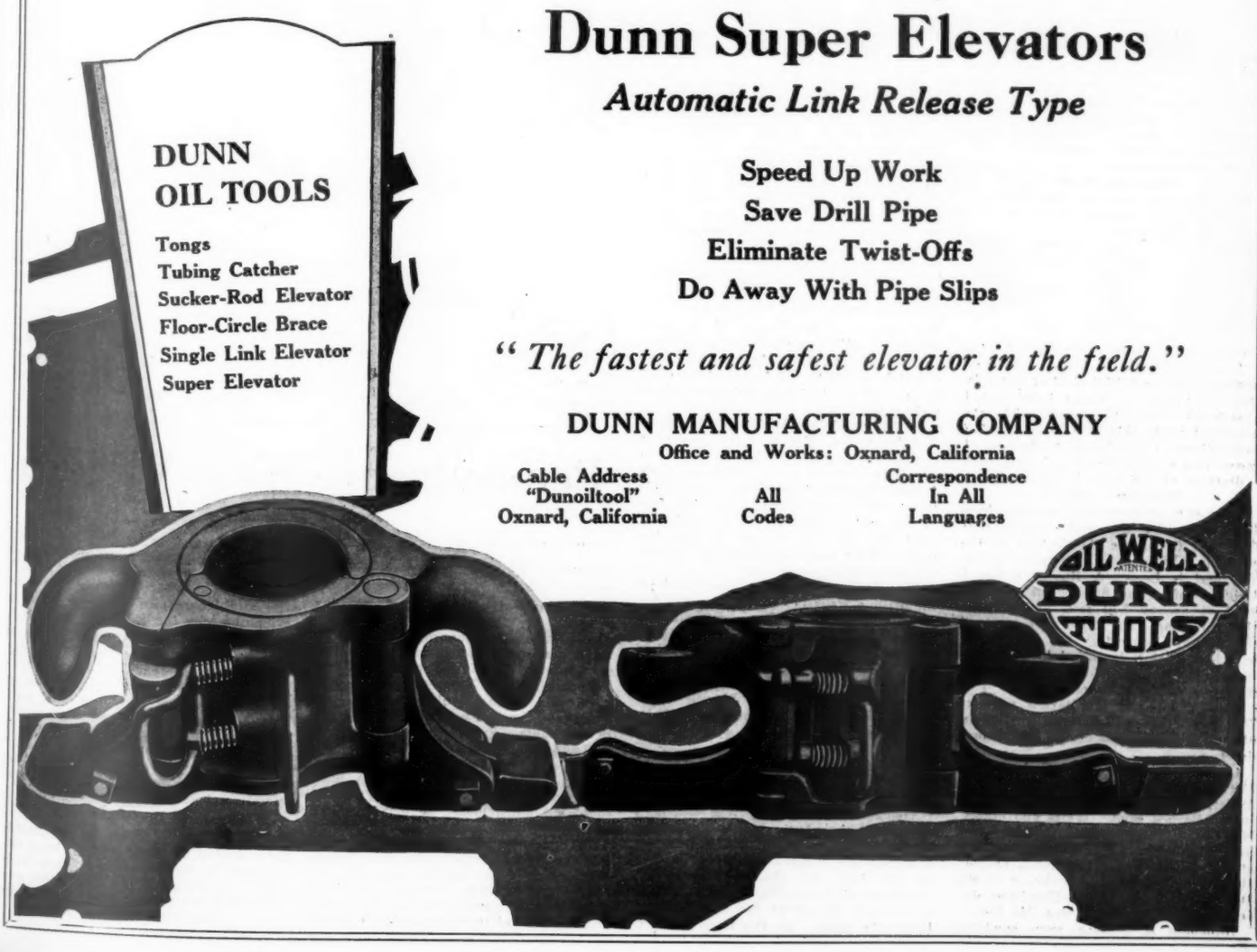


West Kentucky-Tennessee

By Vern T. Whitney

Ten producers completed with initial yield of 223 compared with 434 bbls. new production previous week. Four completions in Owensboro district make 126 bbls. Judio Development Co.'s No. 3 Hume, Cumberland County, estimated 60 bbls. Sandidge Pool extended.

BOWLING GREEN, Ky., Dec. 17.—A drop of 15,674.77 bbls. in production of the western Kentucky fields for the month of November compared with the October totals brought the total output down to 99,833.21 bbls., the lowest figure for this district since 1919. In May, 1921, Warren County alone produced 121,000 bbls.

The largest decline in the field for the month was recorded in Warren County, showing 9,148.72 bbls. less than the previous month. In Allen County a loss of 5,778.04 bbls. is noted.

This decrease in production is because the majority of the operators are only pumping their wells from two to three hours each day, just enough to keep them in condition and few new wells are being drilled. A number of producers are filling storage tanks, in anticipation of an advanced market price.

The decline in oil prices came just at the time the extensions of the Davenport Pool, in Warren County, to the northeast and southwest, had been worked out and many leases were acquired within the proven limits for development. This is also the case in the Owensboro district and in Barren and Cumberland Counties. A canvass shows leaseholders will commence drilling operations as soon as the price warrants.

Pipe Line Runs

The pipe line runs for the month of November when distributed by counties shows the following:

County—	Runs	Decrease	Increase
Warren	52,660.95	9,148.72	.....
Allen	31,835.87	5,778.04	.....
Hancock-Ohio	5,296.68	.....	1,056.09
Barren	4,465.46	1,851.33	.....
Cumb.-Monroe	1,850.67	.....	48.15
Simpson	2,970.23	.....	472.96
Hopkins	753.35	473.88	.....
Total	99,833.21	17,251.97	1,577.20

A resume of the week shows 16 completions, with an initial yield of 223 bbls. from 10 producers, 5 dry holes and 1 abandoned well. Compared with the preceding week, this is a decrease of 7 completions, 1 producer, 6 dusters, 1 gasser and 1 more abandoned well, with a decrease of 434 bbls. in production.

Owensboro District

Four new producers in the Owensboro Field increasing the production in that district 126 bbls. is the feature of the week in the western Kentucky fields. The best is Leeper & Roesner's No. 1 Bailey, which was finished in the Jett sand at around 540 feet, and extends the producing area 2,500 feet west of the Stewart property. On the Chambers lease, being developed by the Kentucky Oil Co., near old Panther Church southeast of the Stewart farm, No. 1 is a 6-bbl. pumper in the Barlow sand at 764 feet. This well extends production about 2,500 feet west of the Bailey producer.

C. E. Daugherty's No. 1 C. Payne, at Herbert School House, offsetting No. 1 Miller, is a 25-bbl. producer at 740 feet, in the Barlow sand. White and others' No. 1 O. T. Burdette on a three-day test pumped 85 bbls. and is estimated to be a strong 25-bbl. well. It extends production 3,000 feet to the northwest of the Bob Miller farm, in the Hurricane district. The total depth was 740 feet.

Randolph & Stevens were spudding No. 1 C. Payne 58 acres at 60 feet. This well is being drilled to offset No. 1 Virgil Miller, southwest of Pellville. In the same district, P. T. Thurman is rigging up on the Tom Ralph farm. The Panther Creek Oil Co.'s No. 4 Bob Miller, in the Pellville Pool, is showing for a light well. The Newton Oil Co. and C. E. Daugherty's No. 4 J. Morrison is making hole at 356 feet; Newton Oil Co. is fishing for tools in No. 3 Lafe Payne, at 600 feet; Dearborn Oil Co.'s No. 2 Abe Howe, shut down; Wood Oil Co.'s test on the Howard farm near Aetnaville, found a nice showing of oil in the Barlow sand but is being drilled to the deeper pay. Near Horse Branch, in Ohio County, the Consolidated Oil Co.'s wildcat test on the Eisler farm was shut down at 684 feet. This company's test on the Miller farm, near Olaten, was also shut down at 430 feet. At Narrows, in the same county, the McCombs Oil & Refining Co.'s test is making hole at 2,665 feet.

Warren County Wells

Only three wells are reported for the week in Warren County, the best of which is E. M. Treat & Co.'s No. 15 Sebe Smith, in the northeast extension area. On test it pumped 15 bbls. after being shot with 60 quarts. Shale was found from 892 to 969 feet and the sand from 1,067 to 1,080 feet, the bottom of the hole. No. 16 Smith is progressing at 875 feet and No. 17 is being rigged up. In this district, E. M. Treat & Co. have drilled 56 wells all of which are on power. The discovery well, according to W. P. Simmons, was completed February 11, 1921, by the Treat interests. The Ohio Fuel Oil Co. got a 12-bbl. pumper in its No. 14 W. A. Gott 100 acres, adjoining the Sebe Smith lease to the east, at 1,023 feet. Shale was found from 839 to 935 feet, and the sand from 1,011 to 1,016 feet, which was given a 40-quart shot.

In the Sandidge district, northwest of Bowling Green, Makeever Brothers have a good showing at 710 feet in No. 3 on the Higginbotham place, adjoining their famous Sandidge lease to the west. This latest well extends production 3,000 feet to the west. Owing to the low price of crude it will not be put to pumping until at least two more wells are finished on that section.

Very little work was accomplished on the drilling wells in Warren County, due to road conditions. One new well was started on the Hawthorne lease adjoining the Weaver tract in Eastern Warren. This property was purchased by Williams and associates of Pennsylvania, who also purchased the Howell lease across the road which is pumping 2 bbls. from three wells.

Allen County Work

The Gainesville district, north of Scottsville, furnished the only producing wells for the week in Allen County. No. 1 Heffington of De Caigny & Dearhoff, offsetting the Lou Motley property, showed 5 bbls. on jack at 457 feet. Stark & Stark's No. 1 Stark is a 2-bbl. pumper at 288 feet. In the No-Name Pool, southwest of Scottsville, Pearson & Co.'s No. 2 Lyle is dry at 318 feet, 90 feet below the shale. In the Keen district, Hill & Co.'s No. 1 Sam Cooper was a duster at 332 feet, 230 feet below the black slfale. G. J. Wahl's No. 1 Barlow was barren at 100 feet below the shale. Herpalhnner and associates' No. 1 Landrum was dry at 225 feet. These two latter tests are located about 4 miles northeast of Scottsville.

Cumberland County

In Cumberland County only one well was completed during the week, No. 3 J. B. Hume of the Judio Development Co. in the Judio Creek district, 12 miles south and west of Burkesville. The well was finished at 580 feet, in the sand below the Penoil Cave and is estimated at 60 bbls. Nos. 1 and 2 are both good pumpers.

Bear Creek District: The Paragon Development Co.'s No. 1 M. L. Spear, completed a week ago making 85 bbls. the first 21 hours, is now down to about 10 bbls. daily. It will be drilled to the deeper pay. E. M. Treat & Co.'s No. 1 Sam Riddle has gone dry. Tubing is now being pulled and the hole will be cleaned out and possibly be drilled deeper. This well when brought in started off at the rate of 750 bbls. daily. It is thought that the oil was found in a crevice formation which was drained or that the oil is being lost through a crevice. Storage amounting to 3,000 bbls. is filled. When the Paragon drilled No. 1 Spear in, 300 feet west of the Riddle well, the Treat well started to weaken and within a few days gave out entirely. On the Sarah Sheckles farm, 1 mile north of the above mentioned wells, Wilcox Brothers are down 150 feet in No. 1 test.

Sulphur Creek: The second Sunnybrook sand was found barren in No. 2 Sam Riddle of Hook, Ross & Wise, and drilling is being continued to the sand below the cave, expected at around 640 feet. The Combest Oil Corp.'s No. 4 A. Huddleston 210 acres was making hole at 400 feet; same parties' No. 1 Groce is spudding at 70 feet; Kanawha Oil Co.'s No. 2 Williams will be started this week. Douglas St. Clairs' No. 1 Victoria King is being cased at 325 feet, where sulphur water was encountered. At Marrowbone Creek St. Clairs' No. 1 Ethel Baker is drilling at 600 feet. The Shady Side Oil Co.'s test on the C. Strange farm, on Big Renox Creek, is idle at around 340 feet.

Kettle Creek: The No. 3 Bud Kerr, reported at 80 bbls. last week, is being drilled on down to the sand found in Nos. 1 and 2 at 370 feet. A showing of oil and gas was struck at 265 feet on the Barkesdale test being drilled by Lynch & Co. The well is being drilled deeper but if no production is found it will be plugged back to the shallow sand and shot. The Daniel Boone Oil Co. is starting No. 3 Widow Logan, located on the same structure as Logan No. 1 and Kerr No. 2, which are both making around 1,000 bbls. daily. W. S. Raydure's No. 1 Sam Smith is shut down. Bushaw's No. 3 Turn Smith is idle at 210 feet; McKee & Co.'s No. 1 Scott is rigging to drill; Louisville Gas & Electric Co. is moving in a rig to drill No. 1 Spear, west of Peytonsburg.

In Clinton County, E. J. Early is making progress at 1,000 feet in his wildcat test on the Wes Wallace farm near Shipley's Postoffice. The Pencil Cave was topped at 888 feet.

Monroe County

Nothing of importance is reported in the Monroe County fields. A number of wells are drilling and a few are due to finish this week. New locations are being made daily, new rigs are arriving and others are being shifted from one district to another. Leasing is still under way and blocking of acreage in some localities to induce drilling is going on.

The only new test started during the week was the No. 1 Crabtree of Bentley and associates, near the town of Vernon south and a little east of Tompkinsville.

Barren County

The wildcat of the Warren Daniel Oil Co. of Dallas, Tex., near the hamlet of Merry Oaks, adjoining the Warren County line, in Barren County, was abandoned at 150 feet on account of lack of funds. The Bryner Oil Co.'s No. 1 Mayfield was finished dry at round 567 feet, in the sand below the shale. The lease is about 3 miles southwest of Glasgow on the upper Bowling Green road.

The Consolidated Gas Co.'s gas wells near Glasgow, in the Hiseville district, have been connected with the city's gas mains, insuring Glasgow an adequate gas supply for winter use. The Globe Gasoline Co.'s gas supply will also be turned into these mains this week, and the purifier for use on the Duff sulphur gas well will be installed soon.

Pennsylvania-West Virginia

By D. S. Wakenight

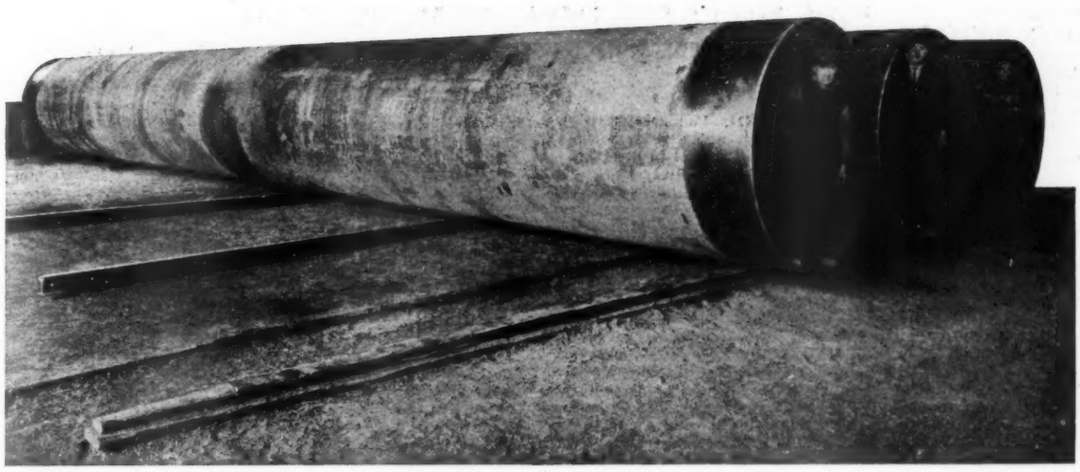
PITTSBURGH, Pa., Dec. 16.—The advance in the credit balance market for crude of the Pennsylvania grade was the outstanding feature of the week. Friday morning the Joseph Seep Purchasing Agency advanced the price for Pennsylvania grades 25 cents a barrel, bringing the quotation for New York Transit and National Transit, Bradford grade, up to $2.85 and Pennsylvania grade in the National Transit, Eureka Pipe Lines and Pennsylvania grades, Buckeye Pipe Lines, up to $2.60. Since the reported decline of the big fields in the West, Eastern operators and producers have been anticipating that higher prices could not much longer be delayed. The 25-cent advance will be appreciated by the producer but will not be an incentive for operators to start the drill before next spring if the market should be advanced several times 25 cents, since it is a hardship to operate during the winter and the kind of territory available is not likely to furnish better than light pumpers. The cost to drill for small wells is just as great as for gushers. All through the depression the cost of drilling material and labor failed to come down in sympathy with the decline in the market.

The only change in refined products during the week came on last Monday when the tank wagon price of gasoline was reduced 1 cent a gallon, bringing that much used product to a lower level than in a number of years. The only reason is the large amount of stocks in storage. During the winter the demand declines and the lower quotation was expected, in a measure, to maintain consumption.

Field Developments

The development work in the Eastern fields during the week was the least satisfactory in many months. Fewer wells were completed and new production was very much less. There was but one com-

(Continued on Page 96)



Three fifty-foot cylinders made from "NATIONAL" **HAMMER-WELD** *PIPE 71¾ in. inside diameter with ⅞ in. walls.*

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HAMMER-WELDED
TANKS—STILLS—DEPHLEGMATORS

and other tubular vessels and containers have strong, tight welds; clean, smooth walls; and rivetless construction throughout.

A hammer-forged weld, being stronger than any other weld, insures an ideal tube for various types of shells for the high pressure services in refining. Other characteristic advantages make it worth while to investigate the possibilities of applying Hammer-Welded products to your various production needs.

Made in Diameters, 20 to 96 Inches;
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EQUIPMENT AND SUPPLIES

CAST IRON WELDING DETAILED IN BOOKLET

An exhaustive but practical treatise on cast iron welding by the oxy-acetylene process, containing much useful information as well as specific, detailed treatment for many of the most common welding problems, has just been published by the Linde Air Products Co. of New York.

"The keynote of successful cast iron welding is a thorough understanding of the necessity for adequate preheating, proper welding practices, and suitable annealing," according to the foreword of the book. "In hundreds of shops and plants throughout the country, the application of advanced methods in this work is resulting in truly remade castings, with consequent saving in money, labor and time. Many others, however, are daily confronted with what are considered difficult problems in the welding of cast iron. The solution of practically all of these problems lies in the proper application of the accepted practices as treated in this booklet."

The booklet was compiled by T. C. Fetherston of the company's publicity department. It is 6 by 9 inches in size, contains 125 pages and is amply illustrated.

TULSA MANUFACTURERS OPEN LONDON OFFFICE

Announcement of the opening of a London office has just been made by J. S. Maloney, head of the Maloney Tank Manufacturing Co. of Tulsa. The company has been exporting its products for several years and the rapid increase of its business in foreign fields necessitated the opening of offices in Tampico, Mexico, and Havana, Cuba, some time ago. Arrangements which are also being made to place a representative in Sidney, Australia, are expected to be completed soon.

The company's largest export business is with South America, and its shipments go to all of the oil producing countries on that continent. Stocks of tanks are kept for immediate distribution in Tampico and Havana. Export offices are also maintained by the company in New York City and in Los Angeles.

The Maloney Tank Manufacturing Co. is one of the pioneers in the tank building business, having been the originators of the bolted tank. Features of the Maloney tank which are known the world over are the patented cleaning out plate which is flush with the bottom, and the patented crimped seams.

RIVETED AND WELDED CONSTRUCTION TYPE

A new era in steel tank construction is forecast by the Leader Iron Works of Decatur, Ill., in a recent issue of Leader Tank Topics. The article concerns the new Rivet-Weld type of construction which was perfected by Leader engineers after years of experimentation and research and which is said to be particularly applicable to any tank or pressure vessel subjected to undue stresses caused by heat or other agencies.

The Rivet-Weld tanks are riveted for strength and welded for tightness, and while the makers do not claim that the new type of joint is stronger than the old riveted joint, nor that the welded joint is as strong as the plate (as they admit that any welded joint is only as strong as the operator is proficient) they do claim that the joint is absolutely safe and tight, the whole secret being in its design and in the application of the weld. The joints are being designed to suit the conditions in all cases.

PIPE MILLS SEE IMPROVEMENT IN OIL SITUATION; STEEL PRODUCTION HEAVY

By B. E. V. Luty

PITTSBURGH, Pa., Dec. 17.—Production of steel in November was at a rate 9 per cent less than the rate in October, which month had shown a decrease of only ½ per cent from September. The total decrease in the rate, April to November, was 24 per cent. However, April showed the record high production in all steel industry, a production higher than had been thought possible.

December is, of course, expected to show a further decrease. The question is whether these decreases represent a general movement of considerable duration, towards a lower production rate, or are merely seasonal, due to lessened steel consumption in winter and to buyers desiring to reduce inventory to the lowest point against the annual inventory date. The steel producers regard the latter as the chief point, and they predict rather positively that production will be on an ascending scale in January. They do not, however, totally deny the former as a factor, that is, they make no pretense of predicting that recent rates of steel production will be fully restored in the near future.

From a survey of opinions expressed in various quarters, including observers who are not producers or sellers of finished steel products, it seems to be the average or composite of all opinions that 1924 will be a big year in point of steel tonnage, but not as big a year as 1923 has been. Also it is thought possible that profits in steel making will be somewhat larger, since the new year will start with a good level of prices, while in 1923 much relatively low priced business was being filled, on old orders and contracts. Steel prices reached their low point early in March, 1922, then advanced until late in the year, while in January of this year the advance was resumed and continued almost through April.

Even with the decrease, the rate of steel production must be considered large, and to make the point more emphatic the statement can be made that if production declined 10 per cent from the November rate, just reported upon, it would still be 5 per cent above the average of the four post-war years, 1919 to 1922, inclusive.

Steel prices will depend upon the attitude of the producers. If they depended upon relation between demand and productive capacity they would have declined before this. The steel industry would be in very unfortunate position if it could expect to make profits only when demand equals capacity. The attitude of steel producers now seems to be that existing prices ought to be held. In some quarters, but not all, it is held that the balance of probability is that bars, shapes and plates—but not other finished steel products—will decline somewhat before the end of January, say $2 to $4 a ton.

Among the pipe mills the opinion is now fixed that the oil situation has begun righting itself and that the statistical position of oil will improve month by month for some time. The pipe mills speak of the decrease in California production and the tapering off of the Powell Field as governing factors.

Shipments of oil country tubular goods from mills are now very light. Jobbers are buying scarcely at all, but there is a little flow of miscellaneous orders. Whether jobbers will begin stocking after January 1 is doubtful. They could not buy even in the past week and be certain of keeping the material out of January 1 inventory since the mills would probably be able to ship and invoice before that date, even if the material did not actually arrive.

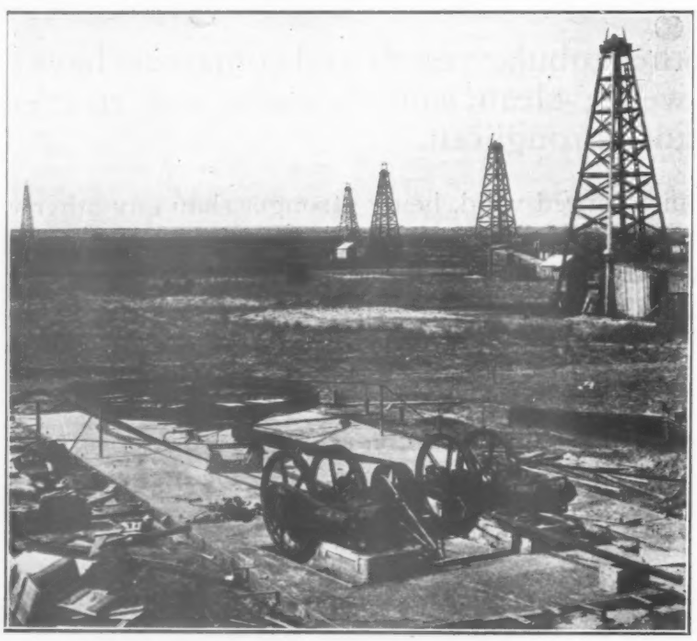
A general guess among pipe mills is that production of oil country goods, outside of line pipe, will be somewhat heavier in 1924 than it has been in 1923, with the decrease that has been occurring for six months or so. On line pipe there are no forecasts.

Demand for butt weld sizes of merchant pipe continues very heavy, and jobbers still have no stocks. Butt weld furnaces are running full but lap weld now have a light operation. Several pipe plants are operating at 60 to 65 per cent of capacity, in tonnage, while some, including plants of the National Tube Co., are running at 80 per cent or more of normal full capacity, though probably not at 80 per cent of their very best records.

Oil storage tank business is practically dead.

Tin plate purchases by the various oil companies are now practically completed for the first quarter of the new year, while most oil interests bought for the whole six months. The quantity taken has been unusually large, aggregating well over a million base boxes. Most of this is for exporting oil, but a little is for direct export of the tin plate to foreign oil fields controlled by United States interests.

UNIQUE POWER PLANT INSTALLED IN TEXAS



A unique power plant, perhaps the most unusual in the oil country, has been installed on the Dale farm, in Block 835, near Electra, Wichita County, Texas, by the Frick-Reid Supply Co.

This plant conists of two 40-H. P. Reid gas engines hooked together, one right and one left hand, with a central driving pulley, which allows the producer to run either engine at his option. These engines are hooked to a 24-foot Reid all-metal underpull band wheel power, with 24-inch throw eccentric, and force feed oiling system. This power is designed to handle any load that it is possible to obtain in a power pumping field.

The Frick-Reid Supply Co. makes a specialty of this construction, and also the construction of its regular 16- and 18-foot band wheel powers, which are known throughout the oil country by all producers of petroleum.

CLAIM MOTOR ADVANTAGES

Three principal advantages of the two-motor electric oil well drilling equipment that has met with success in the Mid-Continent fields during the past year are given in the pamphlet, "Engineering Achievements of the Westinghouse Electric & Manufacturing Co. for the Year 1923," which has just been issued.

These advantages are claimed to be: A perfect drilling motion at all depths of hole; greater reserve power; and the reduction of idle equipment at the close of the drilling program, since the same motors are used for pumping as for drilling.

"Although this scheme of drilling can be used for rotary drilling," the pamphlet states, "its principal advantages appear in the drilling of wells by the cable tool method, and it is in this latter method that the equipment has met with such remarkable success. The scheme utilizes two standard 35-15 H. P. two-peed oil well pumping equipments, having the motors belted to a common countershaft, which, in turn, is belted to the band-wheel. Each pumping equipment embodies the use of a two-speed wound rotor motor and a reversing controller designed to give a large number of drilling speeds. Both motors are operated on the low speed connection for drilling, but for hoisting where high speeds and high torques are required, the high speed connections are used."

International Creosoted Pine Poles

The Three Factors Which Determine Pole Life

There are three requirements absolutely essential to the production of poles which stand up in service and give long life.

FIRST—The selection of a timber with characteristics best suited for pole line service; SECOND—A method of manufacture which retains these characteristics; and THIRD—The selection of the proper method of treatment to preserve them.

International Treated Poles answer all these requirements—they are produced from the very finest Southern Yellow Pine, which have great natural strength and possess the flexibility so necessary to withstand heavy wind and sleet storms successfully.

International's method of production retains the natural characteristics of the Southern Yellow Pine because only good poles are selected for manufacture, and they are cut, peeled and then removed quickly from the woods. They are thoroughly inspected for fungus growth or other strength-impairing defects, after which they are framed and shipped to the treating yard.

International Treatment (the injection of high grade creosote oil for the full length of the pole) preserves the poles, protecting them against grass fires and decay and enable them to retain their great strength and flexibility over long periods of time.

Write for full particulars.

Quick shipment can be made from stock.

International Creosoting and Construction Co.

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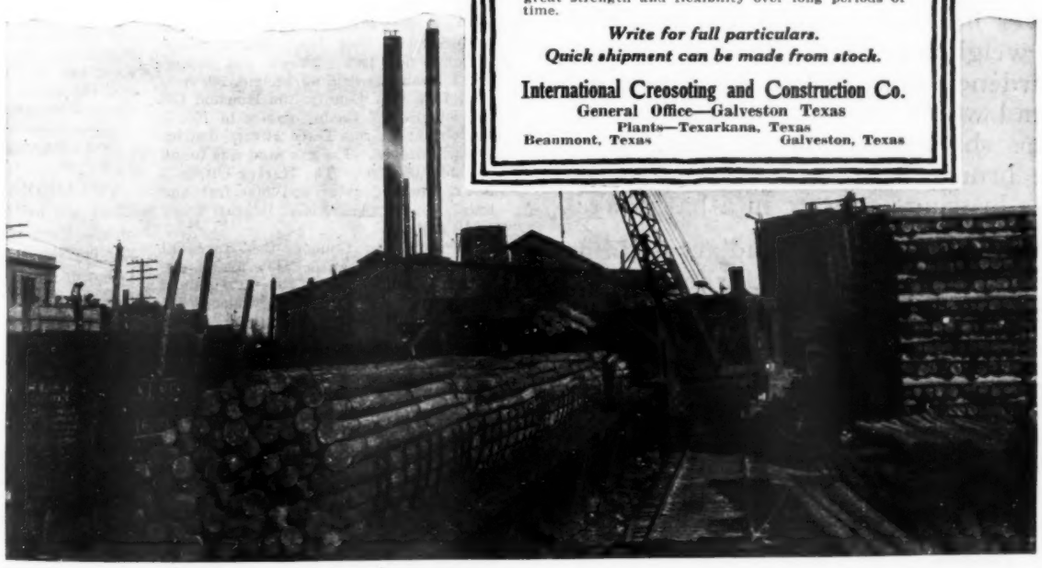

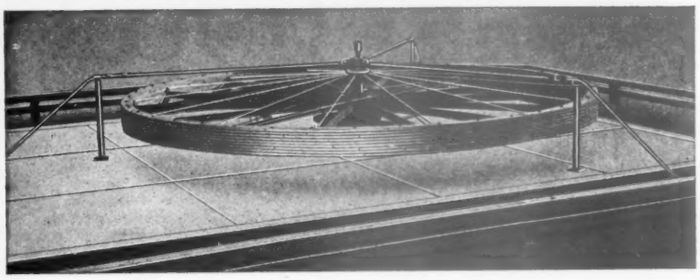

Durnell Talks on Standardization of Pumping Powers

Being the fourth of a series

H. G. Durnell

The BEARINGS of the Durnell Underpull Pumping Power are very important units. They are made of the best of materials and are of extra size to insure sufficient bearing surface.

The upper bearing is of large special design. It is supported to the upper end of the shaft and is held rigid by three truss rods which extend through adjustable turnbuckles to dead men in the ground outside the rim of the band-wheel. This bearing is lubricated with light oil flowing into it from an overhead cup.

The lower bearing consists of two parts. First, the weight of the power rests on two special hardened discs which have rounded surfaces and which act as a pivotal bearing. Second, the shaft is supported laterally by adjustable bronze bearings. Both the discs and bronze bearings operate in a bath of oil.

Best of materials, oversize and accessibility render to the bearings of the Durnell Underpull Pumping Power features that insure efficiency and economy.

INTERNATIONAL SUPPLY COMPANY

EXCLUSIVE AGENTS. STOCKED AT

OKLAHOMA		KANSAS	WYOMING
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	Drumright		Sunburst

MANUFACTURED BY

UNION MACHINE COMPANY

BARTLESVILLE, OKLA.

GULF COAST

(Continued from Page 52)

Freddie Palmer Oil Co.'s No. 2 Sterlsky is around 455 feet. Guthrie and others No. 2 Timmerman is drilling below 565 feet. The Noack Oil Co.'s No. 3 Baldridge is drilling at 575 feet.

Luling and Laredo

No wells were completed in the Luling Field during the week, high water causing a suspension of drilling. The runs of the Magnolia Petroleum Co. from the field during November total 241,547 bbls. compared with 230,252 bbls. during October. The Magnolia Co. handles the output of the United North & South Oil Co., the largest producers there and has its own production as well, in addition to connections with other properties. Most of the wells continue to flow by heads although the gas pressure is weakening. Interest centers in the attempted extension of the structure to the southwest, across the San Marcos River into Guadalupe County, but thus far the developments have been unsuccessful. Six tests are drilling or temporarily shut down, four being drilled by the United North and South Oil Co., the pioneer in the Luling district. South of Kingsbury, Berman & Son's No. 1 Imhoff is drilling below 545 feet and the Magnolia Petroleum Co.'s No. 1 Imhoff is below 2,110 feet. The Plateau Oil Co. is rigging No. 1 Wissenger in the western part of the county. Armstrong and others No. 1 Bear, formerly the West Production Co., east of Seguin is drilling around 2,700 feet and Tiemann and others' No. 1, 1½ miles east of Seguin is also drilling.

The test near Stallings in Gonzales County is drilling around 2,238 feet. The Calif-Texas Oil Co. started No. 1 Jazembeck in Karnes County. In Bexar County, the Idaho Oil Co. is drilling No. 3 Kilborn and the National Oil Corporation Co. No. 3 Cohen. Over in Atascosa County, in the southwest extension of the Somerset Field, the Frontier Oil Co. is starting No. 1 Foster, the Witherspoon Oil Co. No. 1 Langley and J. Harvey No. 2 McKinney. The De Lange-Eiser Co. is setting 8¼-inch casing in No. 2 Tom.

In Medina County, the Ozard Oil Co. is starting No. 1 Schmidt. The Calif-Medina Oil Association's No. 1 Rothe is below 2,000 feet and the McBride Drilling Co.'s No. 1 Adams is setting casing at 945 feet. Carl Bros. No. 1 Smith is below 600 feet. Brown and others' No. 1 Adams is drilling around 400 feet.

In Live Oak County, the Houston Oil Co. mudded off its big gasser in No. 3 Cartwright in the Three Rivers district and will deepen. The gas sand was found around 1,668 feet. The Harkey Oil Co.'s No. 1 Herring is around 800 feet and the Lobo Oil Co.'s No. 6 Reagan below 1,010 feet.

In McMullen County, the Burt Oil Co.'s No. 1 Callihan is below 1,230 feet, Callihan and others' No. 1 Callihan around 815 feet. The Coyle-Colcord Oil Co.'s No. 1 Healey is rigging, as is Napier and Laughter's No. 1 Garner and Finnells' No. 1 Byrne. Bowers' No. 2 Fisher is below 700 feet and Lightfoot's No. 1 Aycock is drilling around 1,520 feet. The Corpus Christi Oil Co.'s No. 2 Barnes is nearing 1,000 feet. The San Balt Oil Co.'s No. 2 Stitz is around 690 feet.

Laredo District

In the Laredo districts, the Magnolia Petroleum Co.'s No. 17 in the Mirando City-Schott section is swabbing 75 bbls. per day at 1,720 feet. In the Aviator section, the Black Panther Oil Co. is rigging No. 4 with locations made for Nos. 5, 6 and 7. The Killiam Oil Co. is rigging No. 3 Noret, northeast of the Schott Pool, to drill to the light gravity sand at 1,940 feet. Duggan and others will try for the same sands with a test 2 miles north of Oilton. Morgan & Gibble's No. 1, 1 mile north of the Caroline-Texas Oil Co.'s gas wells on the Barnsley ranch, is drilling below 2,000 feet. Clark & Howard are starting No. 1 Puigg.

In Jim Hogg County, the Weber Oil Co.'s No. 3 Holbein is around 2,900 feet and the Humble Oil & Refining Co.'s No. 1 East ranch is below 3,065 feet. Pippin and others' No. 2 fee is testing at 1,130 feet. Other tests in that county are idle. The Rockport Oil Co. is drilling No. 2 and the Aransas Pass-Live Oak Oil Co. No. 2 Sigmund in San Patricio County. The Haveline Oil Co.'s No. 1 Weatherby in Edwards County set 6⅝-inch casing at 3,540 feet. The Louisiana-Texas Oil Co.'s No. 1 Moore in the southern part of Scurry County, is below 3,180 feet and fishing. The Humphrey interests are reported to have taken leases on 1,800 acres in that county, north of the test on the Moore ranch.

Gulf Coast Counties

Harkening back to the Gulf Coast Counties, the Texas Exploration Co.'s No. 15 Warren on the north side of the Hockley Dome in Harris County, is drilling around 1,785 feet with a location for No. 16 Warren. The Houston Oil Co.'s No. 1 Mayes in Chambers County is below 1,545 feet. Paul A. Briant of Houston, has a location in the south end of that county close to the shore of Trinity Bay.

The South Dayton Oil Co. is having trouble setting strainer in No. 1 on the Wilson, south of Liberty, Liberty County, to test nine feet of sand at 3,140 feet. The showing has caused leasing activity, the average bonus price paid being $20 an acre.

Over in Louisiana, the Four Creeks Oil Co.'s No. 1 Dubach in Lincoln Parish is reported showing some gas at 635 feet.

Royalty Deal

The Federal Royalty Co. has purchased the royalty interests of Lee Hager in the Orange Pool, covering approximately 250 acres for $399,986. The Sun Oil Co.'s No. 2 Brown there, which came in November 26, flowing 3,500 bbls. at 4,560 feet and extending the pool three-fourths of a mile to the southeast, is still flowing around 2,500 bbls. a day with chokers on.

Producers in the Coastal pools are asking a premium of 50 cents per bbl. from independent buyers. An advance by the pipe line companies is expected early in the year. Until recently operators did not look for any advances until March and apparently seemed content to wait, but the declines in the local pools and the slump in the Powell and California fields made them more optimistic.

PANHANDLE DEVELOPMENT

OKLAHOMA CITY, Okla., Dec. 17.—There are wells in the Amarillo district of the Texas Panhandle producing 400 to 1,000 barrels of oil daily and not one barrel of it ever has been sold or offered for sale, in fact can not be bought, says Eph Haines, operator of Amarillo. "Development work is starting on a great scale in the Panhandle," he says. "In Oklahoma you find oil and gas structures covering three or four sections of land; in the Panhandle you find structures covering 500 sections. Two major structures have been identified there but geologists find it difficult on the flat plains to trace boundaries of minor structures. The magnitude of the oil and gas explorations there may be illustrated by the fact that when the Producers & Refiners sold to the Prairie Oil & Gas Co. recently it had 360,000 acres of leases in the Amarillo territory.

The Panhandle semi-circular string of gas wells is now 90 miles long. Two and three gas sands are found in some wells, it is said, with production ranging from 10,000,000 to 200,000,000 feet. A singular thing about these wells is that each, from whatever sand is producing, has a rock pressure of 430 pounds.

"DADDY says we can have a big Christmas tree again this year 'cause he's had work all year. Daddy works at Coopers where they make big gas engines to pump gas with, and Daddy says the men who buy the engines found out that Coopers build 'em so good that they ordered an awful lot, and so lots of little kids like me can have a Christmas tree this year. Hope all them men that buys engines have a Christmas tree at their house and are as happy as me and Mother and Daddy is."—and all the rest of us at the Cooper Plant wish the same.

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MEN KNOWN IN OILDOM

Henry Clay Folger

Henry Clay Folger, chairman of the board of directors of the Standard Oil Company of New York, was born in New York City in 1857. He was graduated from Amherst in 1879 and took a two-year post graduate course at Columbia, graduating in 1881. He entered the service of the Pratt Works in 1879 in a clerical capacity. The Pratt interests were taken over by the Standard Oil Company, and Mr. Folger ultimately worked his way through sheer effort to a high position with the Standard Oil Trust, serving in turn as secretary and then as chairman of the manufacturing committee.

At the time of the dissolution of the Standard Oil Company, Mr. Folger became president of the Standard Oil Company of New York, which office he held until he became chairman of the board of directors in May of the current year. Mr. Folger celebrated his 66th birthday on June 18, last, just after his election to this new office.

Mr. Folger is known in addition to his oil activities as one of the most ardent students of Shakespeare in this country. He is said to have the finest library of Shakespeare in America, containing some 20,000 volumes. He recently paid a record high price for an early edition of Shakespeare at a sale in London.

PERSONAL PARAGRAPHS

S. S. Price, vice president of the Dixie Oil Company, has returned to Tulsa from a trip to San Antonio, Texas.

* * *

Walter W. Fleming, vice president of the Mid-Kansas Oil & Gas Company, has moved to Tulsa with his family.

* * *

J. E. Swindler of Tulsa, vice president of the Frick-Reid Supply Company, made a business trip to Pittsburgh, Pa., last week.

* * *

M. B. Hitchcock, vice president of the Ever-Grip Wrench Company of Chicago, is calling on the oil fraternity in the Mid-Continent.

* * *

M. F. Cribbs, of the Union Tool Company of Torrance, Calif., spent last week in the Tulsa office of the National Supply Company.

* * *

Harry Quinlan, purchasing agent for the Chestnut & Smith Corporation of Tulsa, made a business trip to Ranger, Tex., last week.

E. R. Patty, attorney for the marketing division of the Prairie Oil & Gas Company, spent several days last week in the Tulsa office of the company.

* * *

Clyde Alexander, production superintendent of the Phillips Petroleum Company, was in Tulsa last week en route to the American Petroleum Institute convention.

* * *

C. H. Warner, Jr., formerly Chicago representative of the Indiahoma Refining Company, has opened up offices for the Pacific Petroleum Company in that city.

* * *

H. F. Wilcox, president of the H. F. Wilcox Oil & Gas Company, predicts that a chain of oil pools will be discovered from the Mid-Continent to the Rocky Mountains.

* * *

E. C. Wilson, head of the Wilson & Willard Manufacturing Company of Los Angeles, is en route to Europe for an extensive tour. He is accompanied by Mrs. Wilson.

* * *

W. A. Sinsheimer of Henry L. Doherty & Company, has returned to New York City after spending several weeks in California on business for the Cities Service Refining Company.

* * *

Cyrus Bell, for several years an official in the production department of the Standard Oil Company of California, is in business for himself now with headquarters in Los Angeles.

* * *

G. A. R. Wilcox, sales manager of the Midland Refining Company, a subsidiary of the Skelly Oil Company, has returned to his home in El Dorado, Kans., after a short visit to Tulsa.

* * *

Hortus A. Scott of the Scott-Smith Oil Company, Winston-Salem, N. C., spent several days last week in Tulsa. Mr. Scott represents the Imperial Oil Marketing Company in the North Carolina territory.

* * *

Howard M. Johnson, formerly with Gustafson & Spencer, Sinclair Refining Company and The Texas Company, has been placed in charge of the refined oils division of the Spencer Petroleum Corporation, Chicago.

* * *

W. H. Barber, of the W. H. Barber Company, Chicago, is inspecting his New Orleans industrial plant with J. P. Graver, of the Graver Corporation, preparatory to the installation of 500,000 gallons storage.

* * *

Jay W. Wilson, assistant manager in the Kansas City office of the Standard Oil Company of Indiana has been transferred to the Chicago office of the company. Mr. Wilson has been with the Standard for 17 years.

* * *

R. E. Collom, of San Francisco, former supervisor of oil and gas, announces that he has opened an office in the Crocker Building as a consulting petroleum engineer and is associated with Carl H. Beal, consulting geologist and engineer.

* * *

M. G. Ensinger, Mid-Continent manager of the American Cable Company of New York City, has returned to Tulsa from a two weeks' trip through the southern Oklahoma and northern Texas fields, and reports that business is good.

* * *

H. F. Montgomery, president of the Crown Oil & Refining Company, a subsidiary of the White Oil Corporation of Houston, Tex., has tendered his resignation, to become effective January 1. He will resume the practice of law in Houston.

* * *

S. R. Scivally, Oklahoma representative of the Sinclair Refining Company and the Union Petroleum Company, returned last week to his Tulsa offices after spending several weeks in Hot Springs, Ark. Mr. Scivally is much improved in health.

* * *

Mart F. and Thomas Moroney of Okmulgee and Tulsa, respectively, were in Pittsburgh, Pa., last week shaking hands with old friends and former associates. Both were formerly identified with the Pennsylvania fields before going to Oklahoma.

C. C. Stoll, president of the Stoll Oil Refining Company of Louisville, Ky., with his wife, has started for a trip around the world.

* * *

A. J. Wallace, head of the Transport Oil Company, recently made his first trip to the company's sensational well on the Maricopa Flat, in California.

* * *

Roderick Burnham, manager of lands for the Union Oil Company of California, is optimistic about the future oil prospects in Wyoming and Colorado, following his return from a trip of inspection to the fields in those States.

* * *

T. E. Swigart, superintendent of the Bartlesville experiment station of the United States Bureau of Mines, has arrived in India where he will make a study of conditions in the Punjab Field, according to word received at the Bartlesville, Okla., office.

* * *

A. W. Ambrose manager of the geololgical and land departments of the Empire Companies, and M. R. Shaffer, general superintendent of the oil division of Kansas, Oklahoma and North Texas, spent a week in the fields near Oil Hill and El Dorado, Kans.

* * *

C. C. Lakin, formerly in charge of the Tulsa office for the Standard Oil Company of Indiana, and more recently in charge of the Joliet, Ill., sales division for the same company, has been returned to the home office in charge of asphalt and road oil sales.

* * *

Louis F. Kuehnle, president of the Iowa Independent Oil Jobbers' Association, and president of the Leader Oil Company, of Dubuque, Iowa, is the proud parent of a 9-pound boy, according to a letter received by J. A. Gilmore, secretary of the National Petroleum Marketers' Association.

* * *

A. F. Denniston of the land department of the Magnolia Petroleum Company in south Texas, is at Marlin, Tex., taking treatment for a severe cold. Mr. Denniston is one of the few remaining pioneer oil men, his experience dating back to the days of Pithole and Petroleum Center in Pennsylvania.

* * *

C. N. Scott, former vice president and production manager of The Texas Company, who resigned a year ago and went to California, has reentered the oil game. He and C. J. McManus of Dallas, Tex., with other associates, have acquired a large block of acreage in Louisiana and are preparing to drill.

* * *

C. L. Smith, representative of the Montpelier Manufacturing Company of Montpelier, Ind., makers of the Expanso cups, Page engine pumps and other oil field equipment, has returned to the home office after spending several weeks in and around Tulsa, calling on the trade and investigating conditions in the Mid-Continent.

* * *

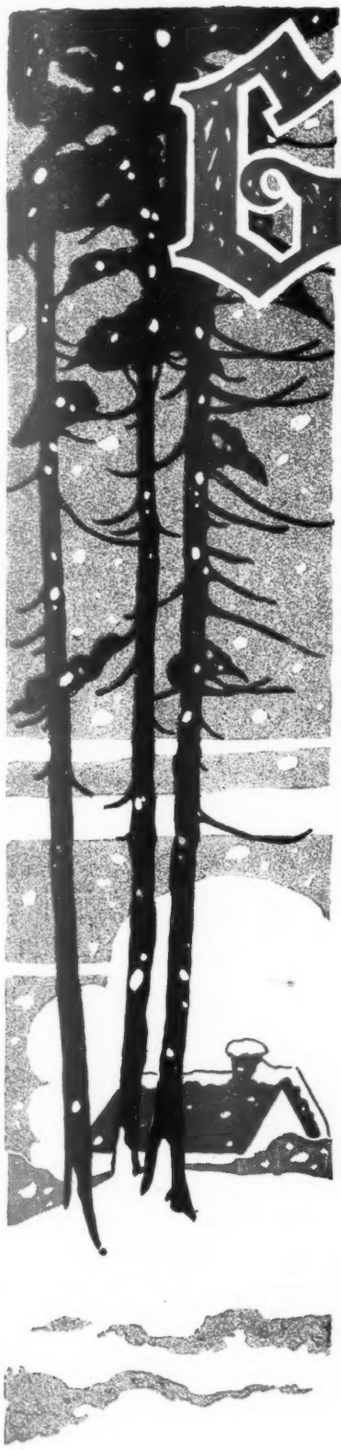
R. R. Irwin, sales manager of the White Eagle Oil & Refining Company, was elected chairman of the board of the Oil Men's Club of Kansas City at the annual meeting held last week. Other members of the board are: J. R. Battenfeld, C. W. Cremer, W. T. Crotzer, C. R. Huston, William A. Knapp and B. E. Shepard. Les Hickox was elected secretary.

* * *

A. C. Smith, for several years connected with W. B. Hassett Companies, has been appointed sales manager of the Great Southern Refining Company, with headquarters at Lexington, Ky. Mr. Smith has been with the company about three years and previously was connected with the Imperial Refining Company and the Imperial Oil Marketing Company.

* * *

D. S. Bushnell, vice president of the Northern Group; W. O. Miller, superintendent of the Illinois Pipe Line Company; C. H. Kountz, vice president of the Prairie Pipe Line Company; F. T. Williams of the National Transit Company, and Forrest M. and A. T. Towl, president and general manager, respectively, of the Southern Pipe Line Group, were Pittsburgh, Pa., visitors last week.



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N. LOUISIANA-ARKANSAS

(Continued from Page 50)

Smith, Section 25-15-17. L. K. Halimton is setting 6-inch casing at 1,880 feet in No. 1 Patton, Section 31-15-16. The Humble Oil & Refining Co. has derrick up for No. 1 Ferris, Section 34-15-15.

Hunt and associates set 6-inch casing at 1,860 feet in No. 2 Solmson, Section 30-15-16. The Invaders Oil Co. has gone back to its No. 2 Hardin, Section 28-15-16, completed in August as a 300-bbl well, drilled the hole a little deeper and is now waiting on standard rig to pump at 2,298 feet.

Rigs Up

Kletz & Thomas have rig up for No. 1 Peace, Section 26-15-17. Lewis & Clark have rig up for No. 4 Berry, Section 24-15-17. The Magnolia Petroleum Co. set 6-inch casing at 2,194 feet in No. 3 Patton, Section 32-15-16; set 6-inch casing at 2,190 feet in No. 2 Patton, same section; and drilling at 1,750 feet in No. 3 Smith, Section 31-15-16.

The Majestic Smackover Oil Co. has derrick up for No. 2 McElroy, Section 29-15-16. Newton and others have derrick up for No. 2 Cunningham, Section 25-15-16. J. D. Reynolds tested No. 1 Smith dry and is bailing liner to drill deeper at 2,290 feet, Section 25-15-17. The Roxana Petroleum Corp. is drilling at 2,240 feet in No. 1 Laney, Section 31-15-15.

The Simms Oil Co. is drilling at 1,920 feet in No. 6 Hildebrand, Section 28-15-15 and is down 2,020 feet in No. 1 Reynolds, Section 32-15-15. The Smith Refining Co.'s No. 4 fee stands full of oil and setting 2½-inch tubing and packer at 2,285 feet, Section 30-15-16. It has a rig up for No. 5 Patton, Section 31-15-16.

Snowden & McSweeney's No. 2 Taylor stands full of oil at 2,290 feet, sanded up and they are cleaning out, Section 29-15-16.

Stephens Field

Columbia County: There were no wells completed in this district last week and very little drilling activity under way. The Atlantic Oil Production Co. set 6-inch casing at 2,080 feet in No. 4 Milner, Section 24-15-20. The Magnolia Petroleum Co. is drilling at 2,000 feet in No. 4 Hammond, Section 25-15-20.

Ouachita County Area

The Atlantic Oil Production Co. set 10-inch casing at 100 feet in No. 4 John Webfer, Section 30-15-19.

Nevada County

Smitherman-McDonald are waiting on standard rig to pump No. 1 Wallace at 1,210 feet, Section 11-14-21. The Transcontinental Oil Co. tested No. 1 Blakely dry at 1,485 feet and is drilling at 1,890 feet, Section 14-13-20.

Bellevue-Bossier

Two wells were put on the beam in the shallow sand territory in Bossier Parish, the Humble Oil & Refining Co. getting a 20-bbl. pumper at 360 feet in No. 26 Roy, Bliss & Weatherbee, Section 15-19-11, and the Standard Oil Co. a 40-bbl. pumper at 372 feet in No. 10 Bliss & Weatherbee, Section 10-19-11.

The Humble Oil & Refining Co. is rigging up to drill Bliss & Weatherbee A-8 in Section 10-19-11; Olmstead and others set 6-inch casing at 287 feet in Strange A-11, Section 23-19-11 and the Standard Oil Co. has derrick up for No. 4 Bliss & Weatherbee in Section 10-19-11. R. O. Roy is arranging to pump No. 27 Scandland in Section 15-19-11 and the Standard Oil Co. No. 9 Bliss & Weatherbee in Section 10-19-11.

Caddo Parish

The Dixie Oil Co. completed a 10-bbl. pumper in the chalk rock at 1,695 feet in No. 2 State, Section 13-21-15. Derrick is up for No. 57 Robertshaw in Section 14-21-15. The Louisiana Petroleum Co. is arranging to drill No. 1 Brewer in Section 33-23-16, 5 miles northwest of Vivian in the north end of Caddo Parish. Brewer & Sewall are drilling at 2,445 feet in No. 1 Sharp, Section 15-18-16, 10 miles west and a little north of Shreveport.

The Crude Oil Co. has a fishing job at 1,500 feet in No. 1 Alex & Ledbetter, Section 27-16-14, 10 miles south of Shreveport. The Humble Oil & Refining Co. is drilling at 2,780 feet in No. 1 Youree Randolph, Section 24-20-15, 5 miles east of Mooringsport.

Red River Parish

The Fortuna Oil Co. completed a small well on the Pugh lease in Section 7-12-10, in the Bull Bayou district, No. 58, pumping 10 bbls. at 2,806 feet. Caldwell and others are drilling at 1,620 feet in No. 1 Welch, Section 7-14-10, 5 miles north of the Old Crichton Field.

Louisiana Wildcats

Bienville Parish: The Standard Oil Co. abandoned its test on the Leona Scott lease in Section 21-17-8, 10 miles southwest of Gibsland. A location has been made for No. 1 Woodard & Walker, in Section 16-17-8. The Ohio Oil Co. is drilling at 1,850 feet in No. 1 Bodcaw Lumber Co., Section 19-16-6, 3 miles west of Bienville.

Lincoln Parish: The Four Creek Oil Co. is drilling at 1,390 feet in No. 1 Colvin, Section 27-20-3w, 15 miles southwest of Farmerville.

Morehouse Parish: Morris, trustee, completed No. 1 White in Section 28-20-5, making 32,000,000 feet of gas at 2,228 feet.

The Carson Carbon Co. set 12½-inch casing at 165 feet in No. 1 Irvin, Section 28-20-5e; Cronin & McKenzie are drilling at 2,080 feet in No. 2 Perry, Section 13-20-4; Morris, trustee, rigging up to drill No. 1 Rogers in Section 15-20-5. Richland Oil & Gas Co. made a location for No. 1 Chess Wymond, in Section 33-19-6 and the Southern Carbon Co. is closed down at 745 feet on account of the high water in No. 11 Spyker, Section 17-20-5.

Ouachita Parish

The Magnolia Carbon Co. completed No. 1 fee in Section 18-20-5, making 17,000,000 feet of gas at 2,225 feet.

The Atlas Oil Co. is down 3,130 feet in its deep test on the West Virginia Timber Co. lease in Section 3-18-5e. The following companies are waiting for 6-inch casing to set before drilling in: The Chester Carbon Co., the Consumers Gas Co., the Fortuna Oil Co., Hosterman and others, Ladel and others and the West Virginia Oil & Gas Co.

The Cosmos Carbon Co. is drilling at 2,255 feet in No. 2 Hancock, Section 20-19-5; Haynes and others closed down at 2,255 feet in No. 1 Cole, Section 35-20-4, on account of high water; Magnolia Carbon Co., derrick up for No. 2 fee, in Section 18-20-5 and Peerless Carbon Co. drilling at 1,640 feet in No. 2 fee, Section 28-19-5.

The Southern Carbon Co. is drilling at 150 feet in No. 25 fee, Section 27-19-5 and location made for No. 26; set 8-inch casing at 860 feet in No. 6 Fairbanks and made location for No. 7 in Section 43-20-5, and the Texas Louisiana Producing Co. is drilling at 1,550 feet in No. 3 fee, Section 4-19-5.

The Texas Co. is drilling at 1,900 feet in No. 3 Gibbs, Section 29-19-5 and set 8-inch casing at 850 feet in No. 4 Gibbs, Section 20-19-5, and the United Oil & Gas Producing Co. is drilling at 1,100 feet in No. 1 Kerr, Section 12-19-4.

Union Parish: In the Farmerville district, Davidson & Palmer are drilling at 1,300 feet in No. 1 Green, Section 19-23-1e, and Woodard & Clarke at 1,750 feet in No. 1 Clarke, Section 17-23-2e.

In the east end of the parish, about 10 miles northwest of the Monroe gas field, the Union Power Co. is drilling at 1,650 feet in Union Saw Mill A-5; at 1,960 feet in A-6; at 1,225 feet in A-7; and set 12½-inch casing at 165 feet in A-8.

Webster Parish: In the Cotton Valley district, O'Brien and others are drilling at 1,430 feet in No. 1 Doles, Section 26-21-9; Oil Field Gas Co. set 6-inch casing at 2,390 feet in No. 1 Hope estate, Section 26-21-9, and the Fortuna Oil Co. is building derrick for No. 1 Pruitt in Section 17-21-9 and made a location for No. 1 Stratton in Section 31-22-10.

In the southeast corner of Webster Parish, the Standard Oil Co. has derrick up for a test on the Woodward & Walker lease in Section 16-17-8, 10 miles southeast of Minden.

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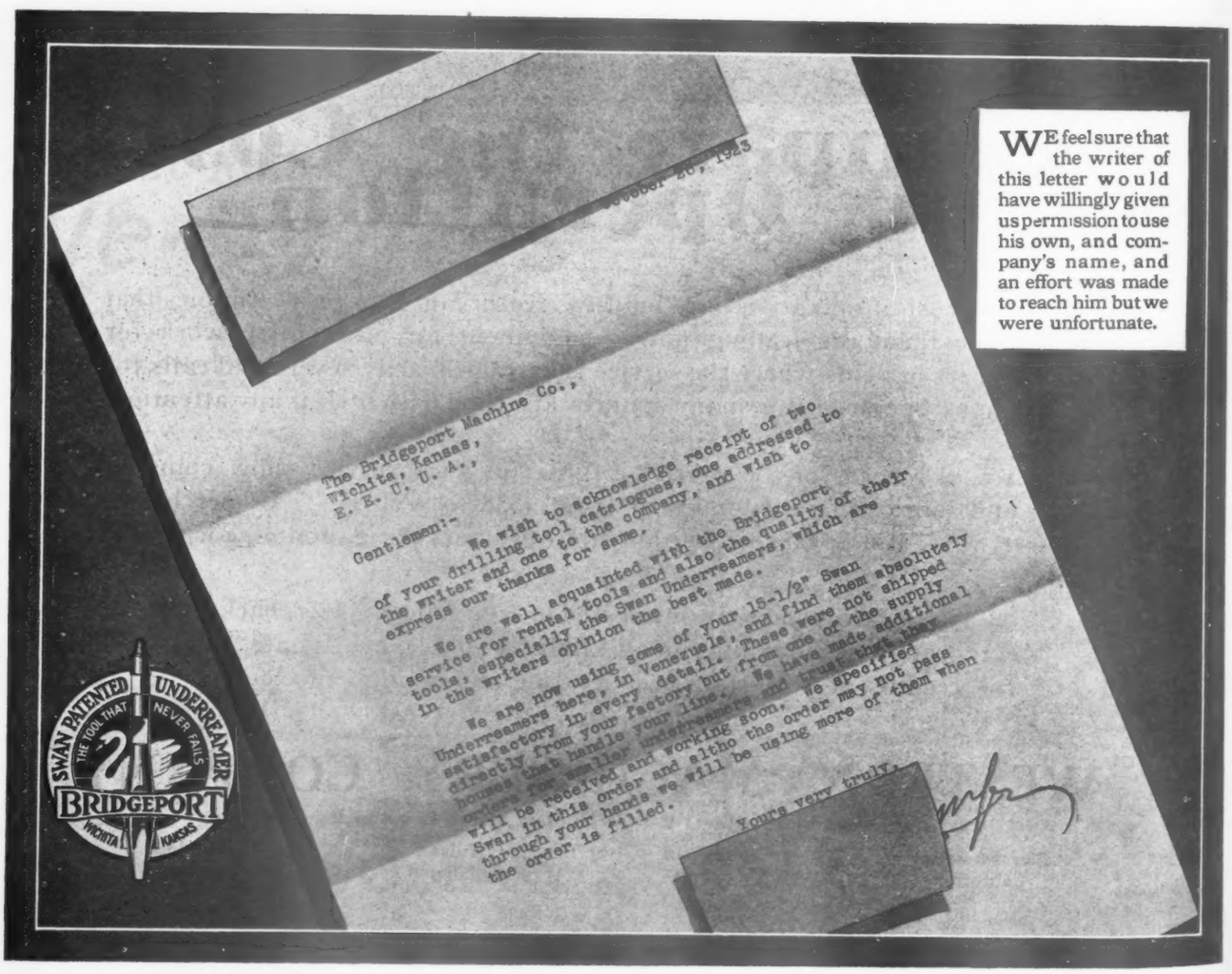
BRIDGEPORT BRIDGEPORT BRIDGEPORT

The Swan's Supremacy in South America

again shown by a letter which, as yet, we have not secured permission to use.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WICHITA KANSAS
October 26, 1923
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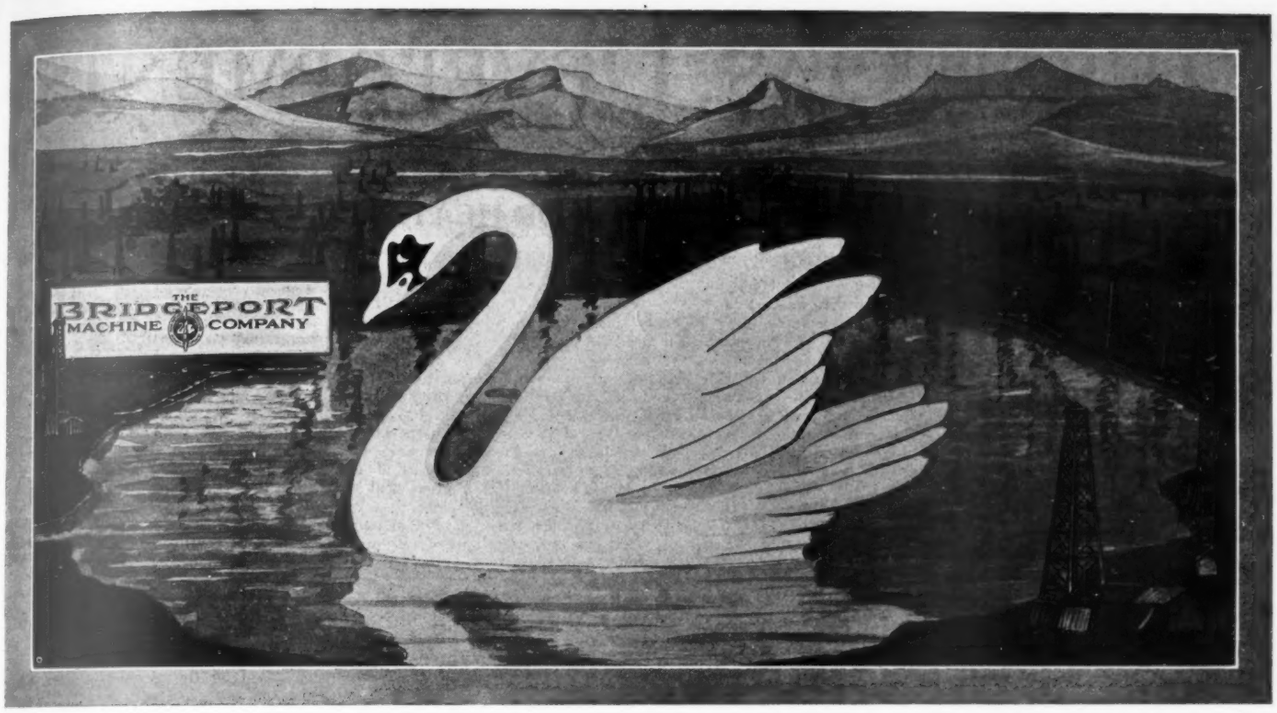
Gentlemen:-
We wish to acknowledge receipt of two of your drilling tool catalogues, one addressed to the writer and one to the company, and wish to express our thanks for same.
We are well acquainted with the Bridgeport service for rental tools and also the quality of their tools, especially the Swan Underreamers, which are in the writers opinion the best made.
We are now using some of your 15-1/2" Swan Underreamers here, in Venezuela, and find them absolutely satisfactory in every detail. These were not shipped directly from your factory but from one of the supply houses that handle your line. We have made additional orders for smaller underreamers and trust that they will be received and working soon. We specified Swan in this order and altho the order may not pass through your hands we will be using more of them when the order is filled.
Yours very truly,

WE feel sure that the writer of this letter would have willingly given us permission to use his own, and company's name, and an effort was made to reach him but we were unfortunate.

BRIDGEPORT BRIDGEPORT BRIDGEPORT



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NATURAL GAS DEVELOPMENTS

Mine Bureau Experts Find New Gas Zone In East Smackover

Recent investigative work performed by engineers of the Department of the Interior, attached to the Dallas office of the Bureau of Mines, indicates that a new gas-bearing zone of considerable importance has been developed in the East Smackover oil and gas field in Arkansas.

This gas-bearing formation is in the second productive zone, but lies immediately above the main second zone sand, which is producing oil in the West Smackover Field. The Bureau of Mines engineers designate this as the "Primm gas zone" to distinguish it from the "Meekin sand," a name which has been applied to the main second zone oil sand of the West Smackover Field. Production from the Primm gas zone was first developed on the Primm farm, in Section 1-16s-16w.

The large gas wells drilled in Section 1-16s-16w, Sections 6 and 7-16s-15w, Section 31-15s-15w, and Section 36-15s-16w, have proved a reservoir of gas in the East Smackover Field, which probably underlies a large area. The gas comes from about 40 feet of sandy formation, called the Primm gas zone. The rock pressure in this gas zone is about 1,000 pounds per square inch. The recent drilling further shows that the Meekin sand carries salt water in the East Smackover Field, except on the highest part of the Norphlet Dome.

The available data for estimating the extent of the gas reservoir are meagre. The areal extent of this gas field is roughly estimated as not less than 12,000 to 13,000 acres. This estimate is based on the structural position of two wells that produce some oil and large quantities of gas. The estimated area is that of the part of the structure above these wells. Wells drilled on lower parts of East Smackover structure will probably produce oil and gas from the same formation.

It appears that the sands in the gas-bearing zone are not developed as regularly as the Meekin sand. The equivalent of the Primm gas zone has only an occasional sand lense in the West Smackover Field. There these sand lenses produce oil in a few wells. It is possible that sand is lacking at this horizon in some parts of the area outlined as a probable gas field.

There is not sufficient information available to make an accurate estimate of the total thickness of gas-bearing formations. Twenty-one feet of hard sand and 2 feet of sandy shale were logged above the Meekin sand in Roxana Petroleum Corp.'s Primm No. 1 and 12 feet of hard sand with 13 feet of sandy shale were logged above the Meekin sand in H. L. Hunt Primm No. 2. These wells are located in Section 1-16-16.

The large, sustained production with a comparatively slow decline of rock pressure in Roxana Petroleum Corp.'s Primm No. 1 would indicate that the sand body has considerable volume.

Four wells have shown that the Meekin sand carries salt water in the East Smackover Field. Salt water was found in Union Gas Co.'s Primm No. 1, Section 1-16-16, at a depth of 381 feet below the top of the Nacotoch sand or 5 feet feet below sea level. The Metric Oil Co.'s Horton No. 3, Section 36-16-15, which penetrated the top of the Nacotoch sand at 1,837 feet below sea level, encountered salt water at 370 feet below the top of the Nacotoch sand or five feet below the top of the Meekin sand. A slight show of oil was logged in the first

(Continued on Page 147)

GAS FOR SUMMER, OIL FOR WINTER SUGGESTED AS IDEAL FOR HEATING

By N. O. Fanning

NEW YORK, Dec. 15.—Philadelphia has fallen in line with New York and Boston in preparing to push the sale of fuel oil for the heating of American homes. A representative gathering of oil producers, burner manufacturers and insurance men and architects discussed the merits of oil as a fuel for heating American homes at an enthusiastic luncheon meeting in the Belleview Stratford hotel recently as noted in The Oil and Gas Journal.

Among those who endorsed it were Henry L. Doherty, president of Cities Service Co. and head of the firm of Henry L. Doherty & Co.; R. D. Leonard of the Atlantic Refining Co. of Philadelphia; George Elliott, Fire Marshal of Philadelphia; Henry Loebell, head of the Combustion Utilities Corp. of New York and a recognized authority on combustion engineering problems; John W. Thomas, an insurance expert of New York; Stewart Gillett of the Philadelphia Chamber of Commerce and Charles J. Cohen, former president of the Philadelphia Chamber of Commerce.

"A large number of American homes have been successfully heated with oil as the fuel for a number of years and the idea is not new," said Henry L. Doherty, who continued, "some of the oil men with whom I have talked in an effort to stimulate this oil for home heating movement have objected on the ground that demand will bring about a big increase in price, which will reflect upon the oil producing companies. Let me say that demand will make for a low cost of furnace oil on the same principal that demand for the Ford automobile has enabled the maker to sell them at a low price. For several years there has been a growing demand for oil by American home owners and the demand is there waiting to be met."

Ideal Heating Combination

Mr. Doherty told the gathering that the ideal combination of fuel for heating purposes would be gas and oil, the latter to meet the peak demands of winter weather and gas to meet the every day normal demand.

"Oil," he said, "is the only real competitor the gas men need fear. Coal as a competitor is not in it and this is especially true of the western cities where the householder has to struggle with the dirt and soot of soft coal.

"I can say to you all that the big oil companies of the country are behind this movement for the use of oil for house-heating and will produce enormous quantities of heavy oils to meet the demand as it develops, and as I see it, at prices only a little more than those now prevailing. Oil for house heating is on its way and nothing is going to stop it."

Mr. Doherty said there will have to be an adequate method of servicing the burning installations after they have been placed in the homes.

George Elliott, Fire Marshal of the city of Philadelphia told the gathering he believes in the burning of oil to heat homes and office buildings and has in his own home an oil burning appliance that is giving him great satisfaction, and which he would not be without. "The idea is right," he said, "because of the constant heat factor oil insures. I have burned oil in my home for three years and I would not be without it.

"Speaking officially I want to say that the authorities in Philadelphia will do every thing possible to eliminate the oil burner which has the slightest element of danger or risk—I refer particularly to the gravity type of burner using volatile oils with an inside storage tank of from 10 to 20 gallons capacity. The simple type of burner will find the greatest popularity and in order to make the public appreciate the advantages of oil as a house heating fuel a great deal of educational work must be done.

"The city authorities in Philadelphia ask that the manufacturer of oil burners and the producer of oil play fair and adopt only those burners which are safe. We will welcome all new ideas on the subject as after all what we are striving for is improved service for the public."

Henry Loebell of New York told the 200 guests that of some 1,500 burners now on the market two or three are good ones while about a dozen others offer possibilities of development into efficient heating units.

"Some agency," he said, "must step into the oil for house heating situation and set up standards for the manufacturers and the distributors of oil to live up to for the simple reason that the performance of the equipment installed in the home to burn oil is the thing that will satisfy the owner and keep him sold or dissatisfy him and make him an antagonist. It seems to me that the heaviest grade of fuel oil will be the one best adapted to heating homes, and the one that will be the final choice."

Stewart Gillett of the fire prevention committee of the Philadelphia Chamber of Commerce said he did not believe oil could be burned as cheaply as coal but other speakers contradicted this and explained the additional work of firing a furnace, ash removal and attendent discomforts in using coal were worth about as much as the coal burned.

Will Grow Rapidly

John W. Thomas, New York insurance man, said so far there has been no charge made for insurance on homes which have been converted to burning furnace oil for heating. He suggested it would be wise to tell the man who contemplated making the change from coal to oil to discuss the matter with his insurance broker because of the different standards of the insurance underwriters throughout the country.

Richard Wotowitch of Henry L. Doherty & Co., New York, opened the meeting as temporary chairman and Charles J. Cohen, former president of the Philadelphia Chamber of Commerce was unanimously elected permanent chairman. It was unanimously voted that Chairman Cohen appoint a committee to go further into the subject and arrange for additional cooperating meetings of experts in the Philadelphia territory.

R. D. Leonard of the Atlantic Refining Co., Philadelphia, said he believed the business of burning fuel oil to heat homes is not only a permanent business but will grow rapidly. He stated that at the present time more than 100 office buildings and other buildings in Philadelphia are burning fuel oil in place of coal and that between 500 and 600 homes in Philadelphia are burning furnace oil satisfactorily. He stated with emphasis

(Continued on Page 146)

GAS FIELD DEVELOPS IN KANSAS CITY, MO.

KANSAS CITY, Mo., Dec. 17.—A gas field has been developed within the corporate limits of Kansas City. The well is on property belonging to J. J. Lynn and is at Meyer Boulevard and Brooklyn Avenue. It is said to have a flow of 10,000,000 feet a day. The gas will be used to heat Mr. Lynn's greenhouses.

WASTES OF NATURAL GAS

In 1921 the total amount of natural gas consumed in the United States amounted to 662,052,000,000 feet. This gas came from both gas wells and the casing head of oil wells. No records are available of the percentage of this production furnished by either class of wells. The total oil production for 1921 was 472,183,000 barrels. Assume that an average of 1,000 cubic feet of gas was producer per barrel of oil. The estimated production of casing head gas alone reaches the astounding figure of 472,183,000,000 feet. Some of this gas was used locally for fuel on the leases and was not reported. However, this is no doubt more than offset by the large amount of gas from gas wells, probably half or more, which is included in the Geological Survey report. If half of the gas reported was produced by gas wells, the difference between 72,000,000,000 and 331,000,000,000, or 141,000,000,000 feet, represents the estimated quantity of casing head gas lost in 1921. The yearly loss of dry gas from gas wells is also large. These figures give an idea of the magnitude of the natural gas waste in the United States.

FLOWING OPEN SINCE JULY

Although the production has considerably decreased in the Magnolia Petroleum Co.'s wild gasser No. 1 on the Smith farm, Graham Field, Oklahoma, in the southwest quarter of the southwest quarter of the southwest quarter of Section 24-2-3w, the operators are not able to shut it in due to the fact that the hole is bridged about 200 feet from the top, and further development on its twin, No. 4, which is now drilling, will have to be awaited before it is finally brought under control. It is now making only about 1,000,000 feet. This is the well which has been flowing open since July 4.

COFFEYVILLE RATE HEARING

TOPEKA, Kans., Dec. 15.—A petition asking the hearing on the rate case of the Coffeyville Gas & Fuel Co. be advanced from the April Public Utilities Commission docket to "February or earlier," was filed here. The Coffeyville company maintains that under the rate ordered recently—60 cents per 1,000 feet—the company is daily losing money on their investment. The company officials ask a rate of 65 cents for each 1,000 feet and 75 cents service charge.

NEW SECRETARY

RICHMOND, Va., Dec. 16.—Alexander Forward, member of the Virginia State Corporation Commission, has resigned to become secretary and manager of the American Gas Association at a salary of $15,000 a year. He is a former newspaper reporter.

GAS FOR FAIRFAX, OKLA.

The Kay County, Okla., Gas Co. is completing a gas pipe line to Fairfax, in Osage County, to supply that city with natural gas. It is also enlarging its gas line to Braman, in Kay County.

The OIL and GAS JOURNAL
Rotogravure Section
VENEZUELA
One of South America's Oil Producing Republics

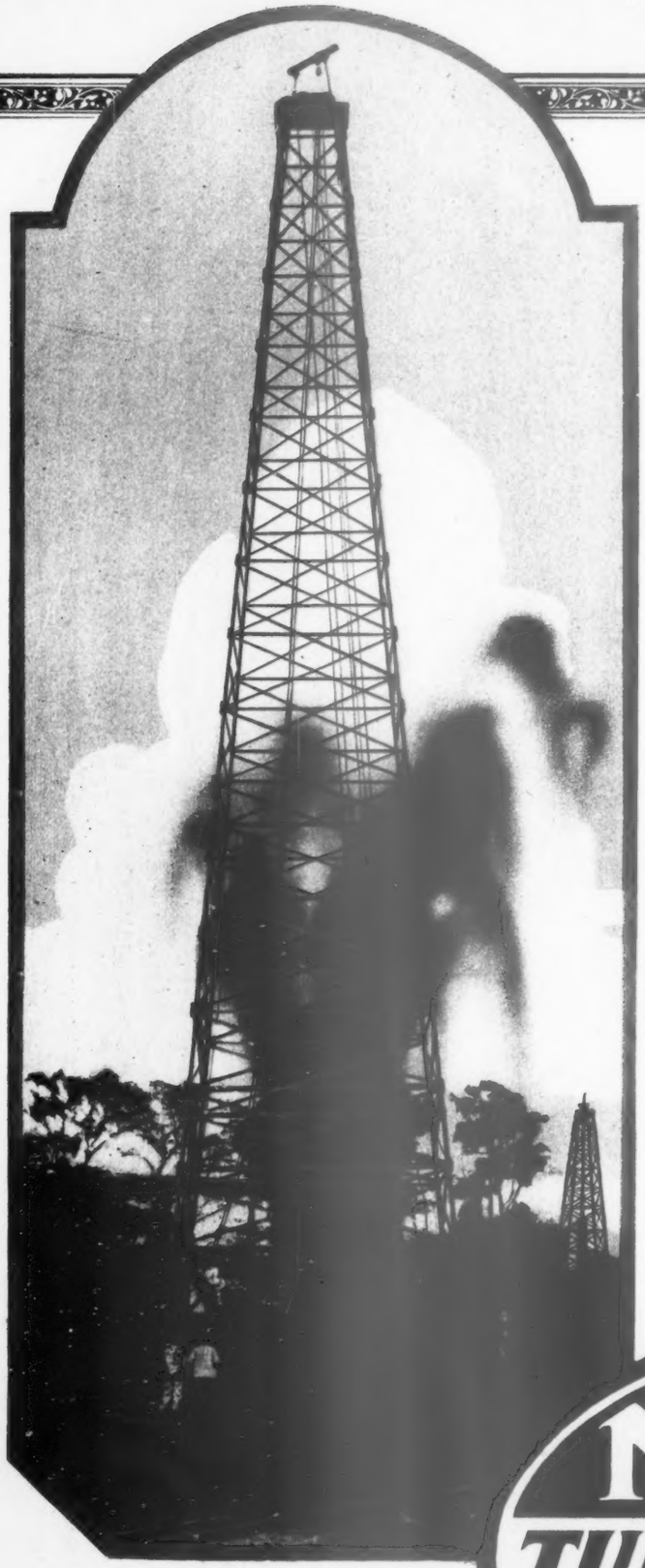
GENERAL JUAN VICENTE GOMEZ
President of Venezuela, S. A.

Previous to 1908 Venezuela, like many other South American countries, had frequent political disturbances which retarded the investment of foreign capital for development of its natural resources. Since 1908 the present government of Venezuela has been under the administration of General Juan Vicente Gomez, whose ability and able direction of the affairs of the government have resulted in extensive progress along many lines, one of the most important relating to the oil industry. Development of the oil resources of Venezuela really began under the administration of President Gomez, and during the past fifteen years of peace enjoyed by the country the wise policies of the chief executive and the proper legislation enacted have done much to give Venezuela a most favorable place in the consideration of American oil men and those from other nations.

President Gomez regards the oil industry as of especial importance to Venezuela and the world at large and has given his influence to the encouragement of the development of the oil resources and the building of means of transportation and other facilities needed. A system of roads more than 3,000 kilometers long has been built, connecting isolated sections.

One of the most important developments connected with the oil industry was the passage of the Petroleum Law in 1918 and revised in 1922. This law has been considered by many one of the most equitable to all persons concerned of any nation. It is based on federal ownership of all mineral rights and was adopted not in an arbitrary way but after careful study and consultation with the representatives of all the large oil interests carrying on operations in the country. The result was a law regarded as practical from an operating standpoint.

The difficulties of transportation, one of the greatest handicaps in many South American countries, are being eliminated through the policy of President Gomez of building roads and bridges required to insure good traffic all the year round. This feature is of especial importance in the development of oil resources of a country. Large sums of money have been expended on these roads on account of topographical features. Many new highways are to be opened in the near future.



Two 112-foot Moore Combination Drilling Derricks used by the largest operators in Venezuela.

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The tube, when used as a column, is by far the strongest structural section known. Therefore, the Moore derricks give the greatest strength with the lightest weight. A girt, brace, or leg section, if lost or damaged, may be easily replaced with ordinary pipe. It is the simplest and easiest of all derricks to erect, dismantle and transport. It is proof against rot, insects, fire and wind hazard. And back of it is the oldest and largest organization in the world devoted exclusively to the designing and building of steel derricks and steel rigs.

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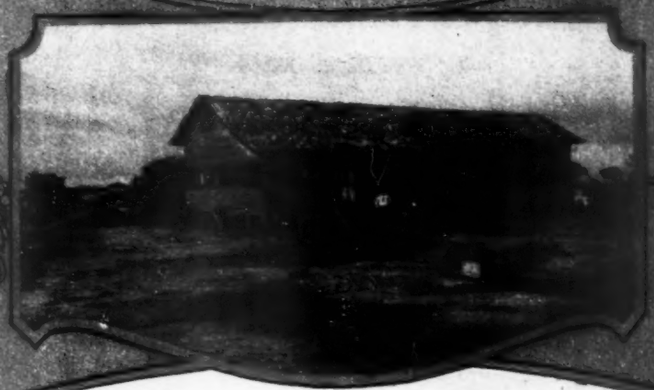
MOORE TUBULAR STEEL DERRICKS

Oil Company Camp Scenes in Venezuela

Engineers camp of British Equatorial Oil Co., Ltd. in Misca field during rainy season

Field Camp at La Rosa



Staff house New England Oil Corp., Ltd. at Motatan del Rio

Rio del Oro camp of Colon Development Co.

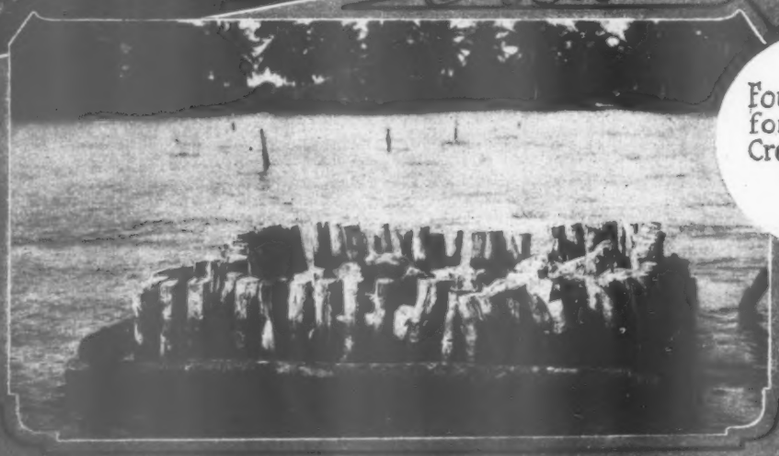
Photo by Kirby

Scenes in Development of Oil Industry in Venezuela

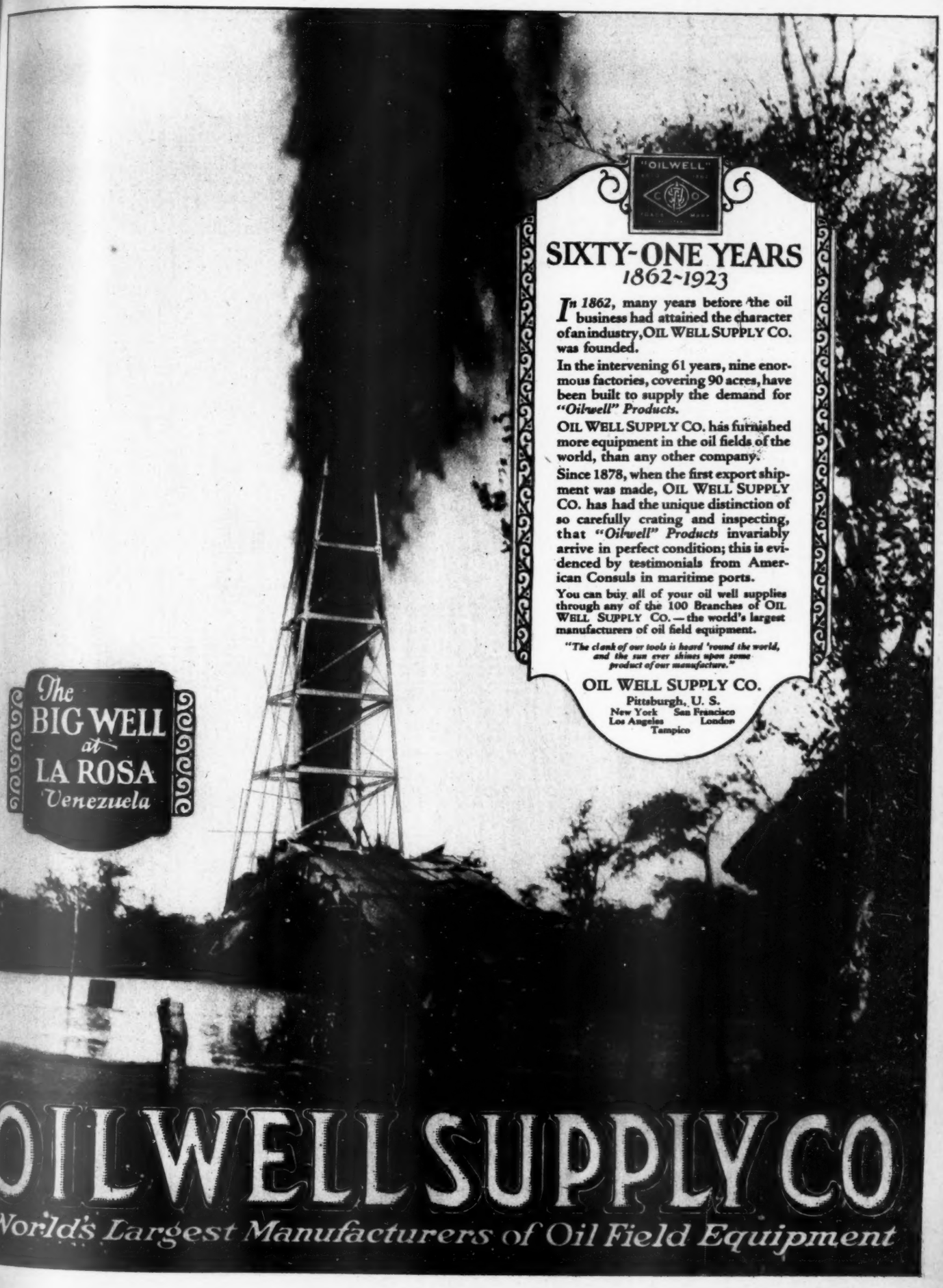
First well drilled in Venezuela in 1883, depth 150 feet; at La Petrolia, State of Tochira

A still at the refinery at La Petrolia

San Temateo on Lake Maracaibo



Foundation for well on Creole Lake zone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Oil Development in Venezuela

By Andrew M. Rowley

The commercial production of crude petroleum began in Venezuela in 1917 although considerable exploitation work had been conducted throughout the Republic prior to that time. In fact, the first well in Venezuela was drilled in 1883 to a depth of 150 feet at La Petrolia, in the State of Tochira. But it was during the early part of the present year that the oil men of the United States and other nations began to realize the South American country had a potential oil production which probably would have an important bearing on the world's petroleum situation. Serious consideration of Venezuela as oil producing territory was forced upon many oil companies who previously had given it little thought, by the bringing in, during December of last year, of two monster gushers, one of which had an estimated flow of from 90,000 to 120,000 barrels a day and the other 35,000 barrels daily.

A New Era Starts

The new era in Venezuelan oil development started December 14, 1922, when the La Rosa well of the Venezuelan Oil Concessions (Ltd.) on the eastern shore of Lake Maracaibo, about 27 miles southeast of the town of Maracaibo, blew itself in with an initial oil flow estimated at 50,000 barrels. This flow increased although there was little gas pressure in the well and it was said the well was making from 90,000 to 120,000 barrels a day on December 23 when it sanded. Hardly had oil men throughout the world recovered from the news of this strike when the Venezuelan Oil Concessions (Ltd.) completed its No. 3 La Paz, about 30 miles east of the town of Maracaibo and on the side of the lake opposite the La Rosa well. The La Paz well was brought in late in December and had an initial flow estimated at 35,000 barrels daily.

The bringing in of the two large wells in one month was believed to reflect the results of the first intensive drilling campaign undertaken in Venezuela by the Dutch-Shell interests which had acquired 55 per cent of the Venezuelan Oil Concessions (Ltd.) shortly after the war.

The Mene Grande district has always been the principal oil producing district of Venezuela. It is located on the east side of Lake Maracaibo and is controlled by the Dutch-Shell group. This field produced approximately 1,433,000 barrels of crude in 1921 and more than 2,000,000 barrels in 1922 The production of crude in Venezuela during the first half of 1923 amounted to 1,412,267 barrels.

List of Operating Companies

Oil companies began to be interested in the Venezuela oil situation early, but the active acquiring of land did not commence until about 1918, becoming very active after the passage of the present Law in 1922. The principal companies with offices in the field at the present time are: Caribbean Petroleum Co. (General Asphalt and Royal Dutch Shell), Venezuelan Oil Concessions, Ltd. (Dutch Shell), Colon Development Co. (Dutch Shell), Standard Oil Co. of Venezuela (Standard of New Jersey), British Equatorial Oil Co., New England Oil Corporation, Ltd., Venezuelan Sun, Ltd., British Controlled Oilfields, Ltd., North Venezuelan Petroleum Co., Venezuela Gulf Oil Co. (Gulf Oil Co., Pittsburgh), The Texas Co., Orinoco Oil Co. (Pure Oil Co.), Atlantic Refining Co., Maracaibo Oil Exploration Co., Compania Venezolana de Petroleo, Creole Syndicate, Venezuela Petroleum Co. (Kunhardt & Co.), Venezuela Oil Corporation, S. A. (Buckley, *et al.*), and Colombian Petroleum Co. (Doherty, H. L.)

Given Object Lesson

Venezuela did not open the land of the country for exploitation of petroleum until after Mexican production had been quite fully developed and until Mexican land laws had created international complications. The Mexican situation really was a wonderful advantage to Venezuela in that it showed the Venezuelan government what it should avoid. Fortunately for its relations with other nations the exploiters of its oil lands did not enter into activity until Venezuela had been given an object lesson. As in all the nations of South America, Venezuela had only in rare instances parted with the subsoil. In that it differed from Mexico where the private owners of the surface had power to lease the subsoil.

To place the question of the ownership of the subsoil beyond dispute, a law was passed while there were only native land owners declaring the title of the subsoil to be in the government. In preparing for the development of its petroleum resources, Venezuela adopted the policy of giving preference to the owners of the surface in the making of the leases, so that the foreigner has been obliged to deal in most cases with the native owners instead of with the government directly. So it happens that today there are numerous instances in which the native owners have valuable oil lands which they may lease. In dealing with these individual owners, the foreigner pays a bonus for the right to the oil deposits. In the case of government land, dealings are directly with the government.

Good Transportation

The lay of the land in the portions of Venezuela that have been exploited for petroleum is particularly favorable to transportation, as the present largest promising production is along and back of the low land bordering the 1,580 miles of coast line, the Gulf of Venezuela and Maracaibo Lake and its tributaries, which affords gravity transportation by pipe line reaching ocean going vessels. The Venezuelans are a conservative people and no special difficulty has been experienced by Americans in dealing with the government and people. An active business man, rather than a professional politician is most likely to be elected to office within the country or for foreign service, as is the case with many of the South and Central American governments. For instance, the Venezuelan minister resident in the United States is a practical lawyer of Caracas, who has been counsel for oil companies in his native land, and he brings to all matters affecting petroleum concessions the experience of the oil man.

Venezuela has in its oil domain a vast estate destined to develop an equally vast revenue for the nation. The country believes that its deposits of petroleum will come on the market at a favorable time after market conditions have become settled. It has employed men of education and technical training to assist in drafting laws to govern oil production and it has thus far pursued no policy to discourage prospective producers Up to this time, machinery has entered the country in limited but sufficient quantities for all development that has taken place. As prospecting has been the chief use for machinery, there has been no extensive importation but it seems certain that the United States will be a large source of all classes of oil well drilling and refining machinery. It is also certain that this industry will depend largely upon the development of the American merchant marine, because prompt delivery will be necessary to build up and keep this trade. As the industry will be divided between British and American companies, it will be seen that there is bound to be keen competition in the matter of machinery

Operations Listed

Listed below are the names of the operating companies and the various localities where production has been obtained or drilling for oil is now in progress:

CARIBBEAN PETROLEUM COMPANY

Mene Grande field, Zo, Kilometer 24, Perija, Quiroz	Maracaibo Basin, State of Zulia
Maturin field, Guanipa	Eastern Venezuela

VENEZUELA OIL CONCESSIONS, LTD.

La Rosa, La Junta, La Paz	Maracaibo Basin, State of Zulia

COLON DEVELOPMENT COMPANY

Rio de Oro, Tarra	Maracaibo Basin, State of Zulia

STANDARD OIL COMPANY OF VENEZUELA

Los Barrosos, Maneta, La Victoria, Km. 10-Pauji road, Rio Lora	Maracaibo Basin, State of Zulia
Ojo de Agua, La Vela de Coro	Maracaibo Basin, State of Falcon
Perro Seco, Quiriquire	Eastern Venezuela, State of Monagas

BRITISH EQUATORIAL OIL COMPANY, LTD.

Misoa field, La Rosa (Lake parcel)	Maracaibo Basin, State of Zulia

NEW ENGLAND OIL CORP., LTD.

Rio Pauji, Menito, Motatan	Maracaibo Basin, State of Zulia

VENEZUELAN SUN, LTD.

El Bano, Boscan	Maracaibo Basin, State of Trujillo
Urumaco	Maracaibo Basin, State of Falcon
Onia	Maracaibo Basin, State of Merida

BRITISH CONTROLLED OILFIELDS, LTD.

El Mene	Maracaibo Basin, State of Falcon
Orinoco Delta	Eastern Venezuela

NORTH VENEZUELAN PETROLEUM COMPANY

El Pozon	Maracaibo Basin, State of Falcon

MARACAIBO OIL EXPLORATION CO.

La Victoria, Maneta, Rio Lora, Santa Ana River	Maracaibo Basin, State of Zulia

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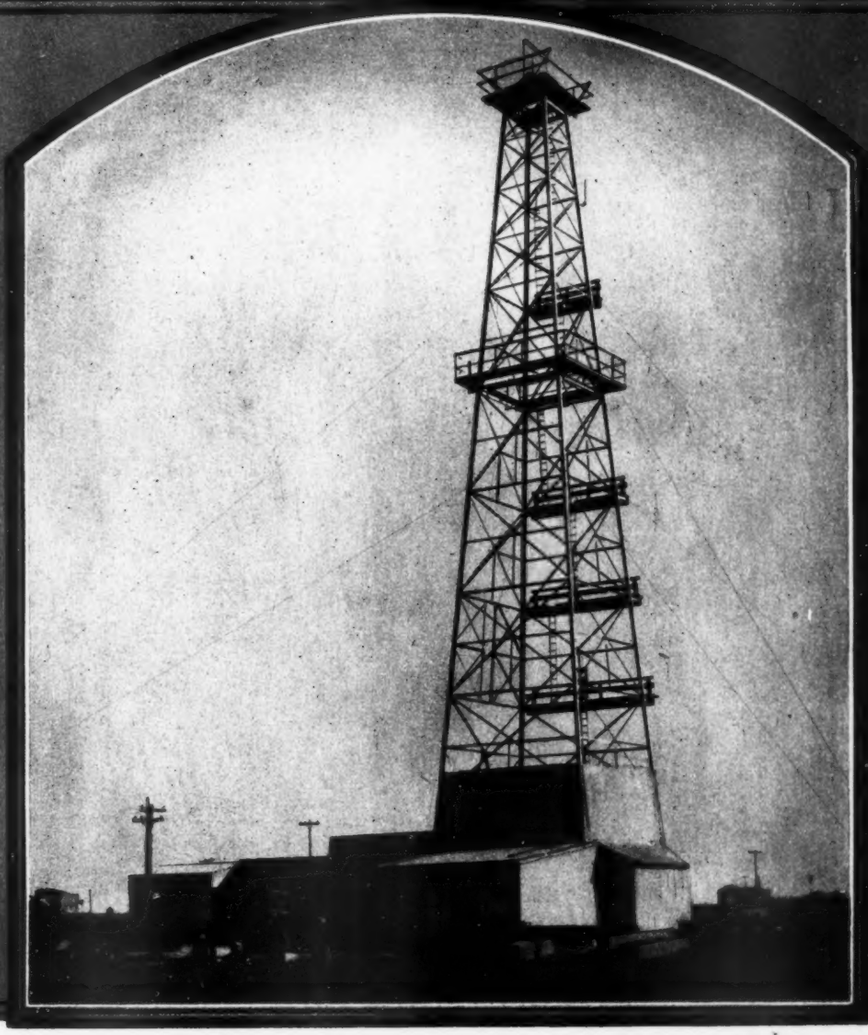

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The famous La Rosa well in Maracaibo Basin which made 100,000 bbls. a day
Galgo No. I which produces 500 to 600 bbls. daily
Flowing well of Caribbean Petroleum Co. which made 6000 bbls. daily
A Colon Development Co. well, District of Colon

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CONTINENTAL

Wildcatting in South America

Large Oil Operators of U. S. Take Lead in Development of Petroleum Industry in Venezuela. Seaboard Refiners Look Ahead.

By N. O. Fanning

At a time of overproduction of oil such as the present, it is perhaps not in fashion to talk of the possibility of a shortage in the near future. Without attempting to make any prediction or statement, even, regarding the course of future production, still there remains one great branch of the oil industry which exists as a fact, irrespective of the possibilities of the future. This branch is that of wildcatting.

Oil producers and other oil men in the United States are of course fully aware that wildcatting must go on continually if oil production is to be maintained near current levels, or increased if the demand calls for it. In the United States wildcatting is carried on by individuals and by companies, large and small. Conditions here are much more favorable for wildcatting than in other countries, and this may partly account for the large output.

Wildcatting Is Difficult

In many foreign countries, where a large part of the land is forested, sometimes with deep jungles, and undeveloped industrially, the work of wildcatting is infinitely more difficult. Despite this fact, some of these countries are believed to harbor such vast oil resources that wildcatting is going on despite all obstacles.

In such countries wildcatting is carried on to a large extent by large corporations, although some is also done by individuals and this work must not be belittled. However, it is easy to see what advantage a large concern would have with millions of dollars to expend on wildcatting, a large corps of geologists and engineers at its command, and wide experience in all branches of petroleum development.

U. S. Companies Lead

Among the large concerns well known in the United States which are in the van of petroleum development in Venezuela are the following: Standard Oil Co. of New Jersey, Atlantic Refining Co., Standard Oil Co. of New York, Texas Co. and Gulf Oil Corporation. These concerns are spending many thousands of dollars in Venezuela despite the current overproduction of oil in the United States. This fact illustrates one thing: That American oil concerns having large refining capacity look to Venezuela for at least a part of their future crude oil supply.

The question of raw material is one of the most important and at the same time most vexing that big refiners have to meet. The Standard Oil Co. of New Jersey, for instance, with refining capacity and requirements large enough to handle 225,000 barrels of oil per day, must look ahead more than a few months for its crude.

Now the company gets its raw material from many different fields. Pipe lines carry high grade eastern crude to its refineries, while tank steamers carry crude to them from the Gulf Coast and Pacific Coast of the United States, from Mexico and from Peru. But that none of these sources are depended on to supply the company indefinitely is indicated by the large expenditures for the development of additional production in Venezuela, Colombia and other countries. Many others of the big oil companies —if not practically all of them—are in the same position today.

New Sources Sought

The Standard Oil Co. of California, in its monthly "Bulletin" said recently that while southern California is yielding a tremendous flood of oil at present, tomorrow an enormous quantity of drilling material may have to be scrapped in that territory. This concern is spending millions of dollars in an attempt to uncover new sources of oil. It has already spent many thousands of dollars without success, but ultimately, no doubt will be rewarded for its efforts.

Venezuela is the most prominent among the countries outside the United States and Mexico where the larger oil operators are turning for future supplies. Granted the difficulties which must be overcome in early development of almost any oil field, this nation promises to become a great oil producer within a very few years. Therefore, the turning to Venezuela for future supplies is entirely logical from the point of view of refiners not only at New York, but at other ports on the Atlantic and Gulf—and even Pacific—coasts of the United States.

Just to illustrate what might happen, let us imagine that the oil fields of the United States deteriorated to such an extent that they could supply only our inland oil refining capacity. There would remain a total of 869,600 barrels daily refining capacity to supply on the Atlantic, Gulf and Pacific coasts, and the crude for this capacity would have to come from foreign fields.

Enormous Requirements

To supply this capacity for a year would require 317,404,000 barrels of crude oil, which is more than the United States produced in 1916, and about equals the surplus stocks of crude in this country at the present time.

It is with a view to some such situation ultimately developing that the big American refiners are helping to develop the fields of Venezuela. And from the other point of view, Venezuela recognizes the possibilities of a great oil industry there, if developed conservatively and properly.

Ten years or more ago there were comparatively few companies operating in the Venezuelan oil fields, but the number has increased enormously since then. No doubt a more rapid development can be obtained with a larger number of competitors, and this is probably the real reason why Venezuela is anxious to encourage new interests to enter its fields.

Ocean Transportation of Oil

The factor of the relative cheapness of ocean transportation of oil is of great importance. The fact that Atlantic Coast refiners are carrying thousands of barrels of oil a day all the way from the Pacific Coast easily brings Venezuela within their economic range of operations. Oil can be carried more cheaply in tank steamers over long distances than by any other method. The large oil refiners located on the coast recognized this when they went into Mexico and later into California. A fleet of tankers is now considered one of the chief assets of the all-around petroleum organization.

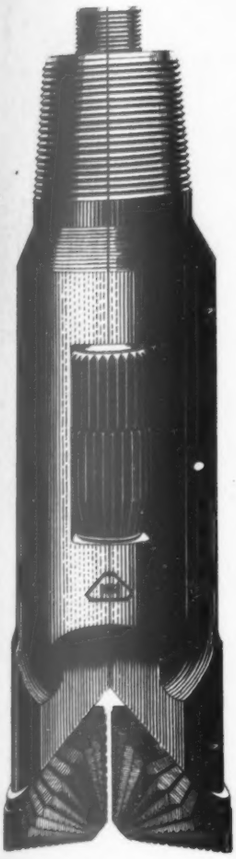
The Standard Oil Co. of New Jersey built some of the largest tankers now afloat when the Mexican oil boom was at its height, some of them being capable of carrying 140,000 barrels of oil at one trip. The tendency is for these organizations to strengthen their tanker fleets. The question of transportation, therefore, can be considered as already solved as far as Venezuela is concerned, except for the short haul from the fields to the seacoast.

The transportation facilities in Venezuela will be increased as fast as the production of crude oil requires it. But the major transportation problem, that from the seacoast to American refineries, which are the logical outlet for Venezuelan production, is already as good as taken care of.

Possibilities Forseen

At present the United States has, apparently, all the oil that it needs from its own fields. However, the uncertainties of crude oil production leaves a very big potential market for crude open to Venezuela from American coastal refineries, looking at it from the market viewpoint. Doubtless other refining centers such as those in England, France and Mexico, will want Venezuelan crude.

Looking at the situation from all angles, therefore, it is evident that Venezuela has an immense future before it if its oil resources are developed along the same conservative lines as at present. Even the richest of gifts can be set at naught by unwise management, and the present Venezuelan Government is guarding against just such an occurrence.



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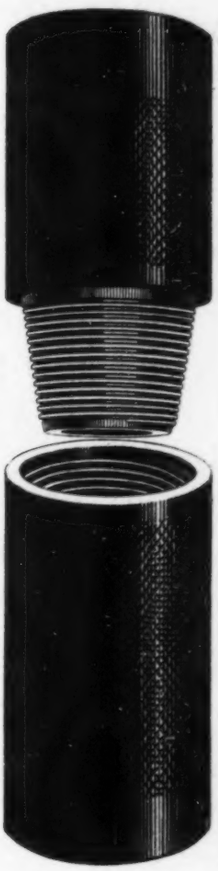

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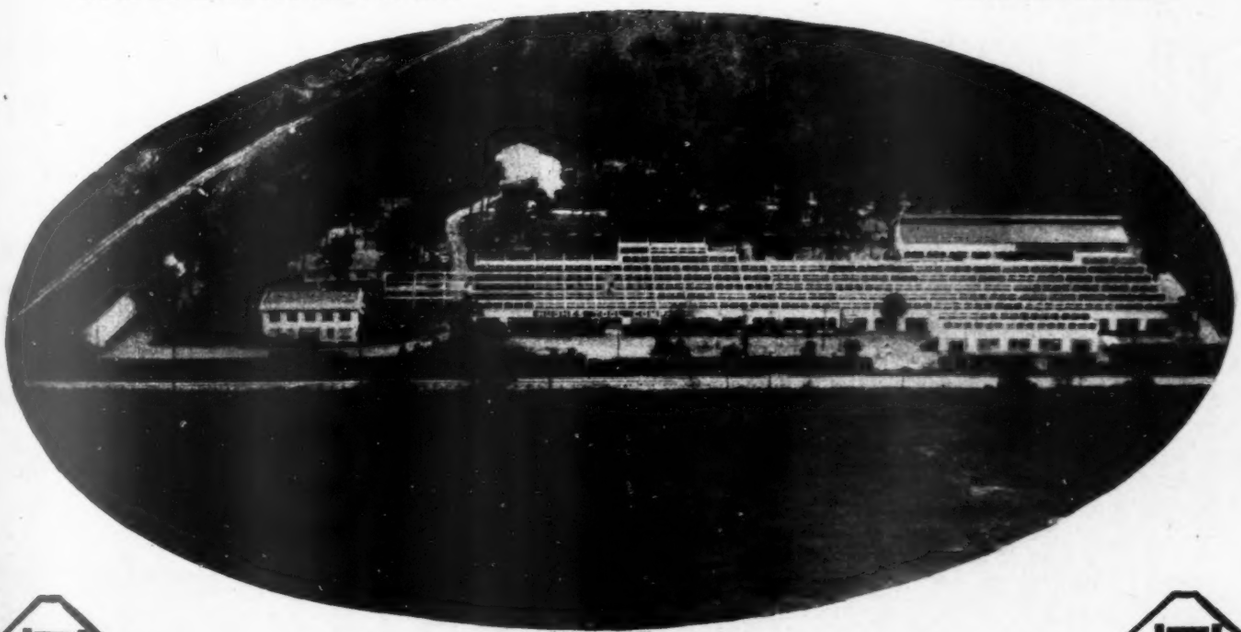
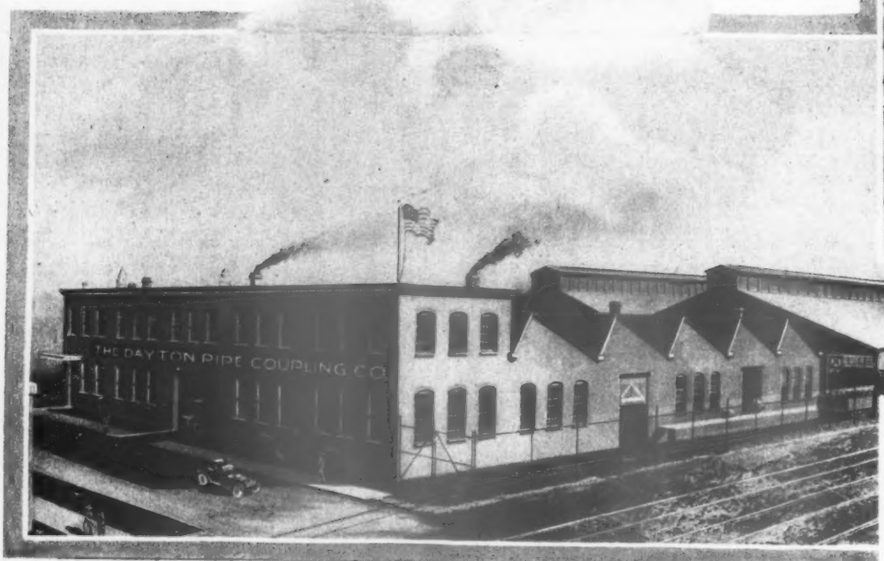


Aeroplane View of Houston Plant of the Hughes Tool Co.



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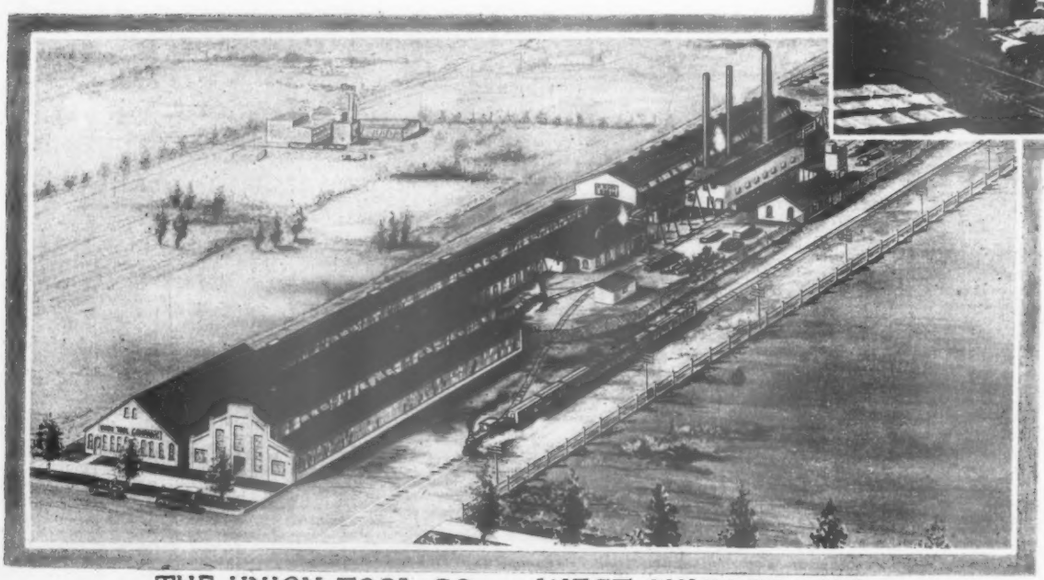

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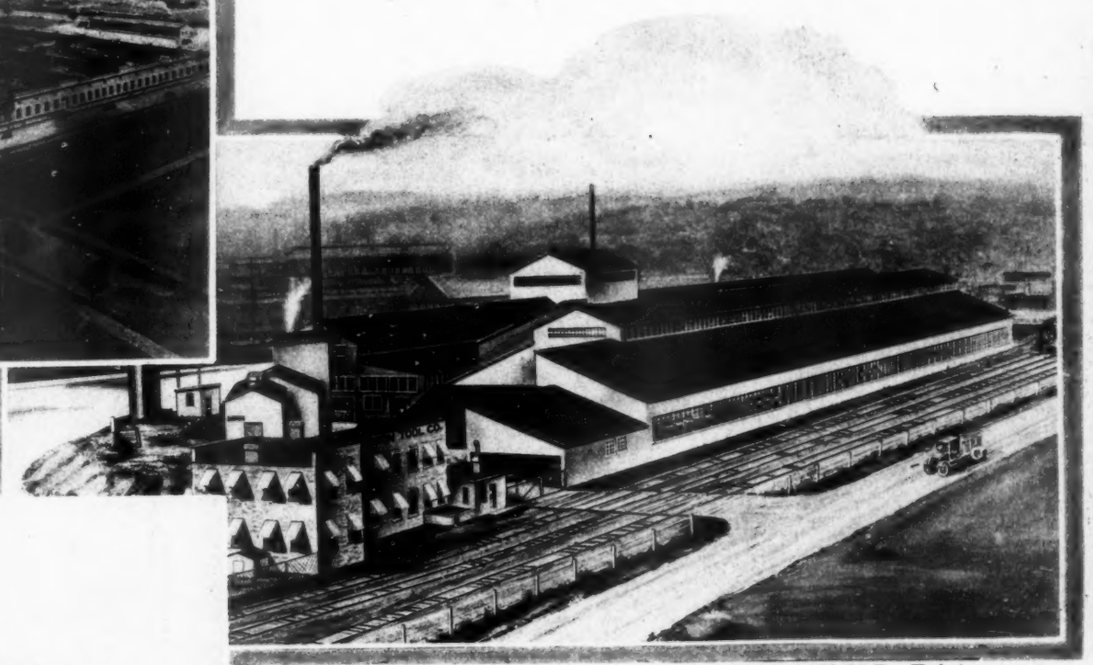

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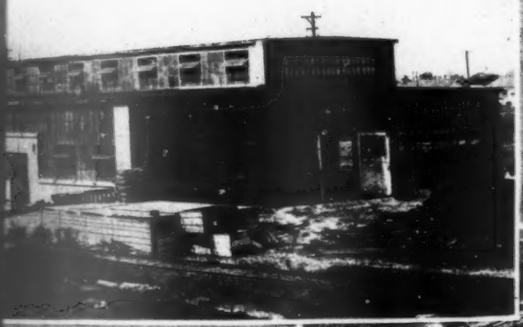

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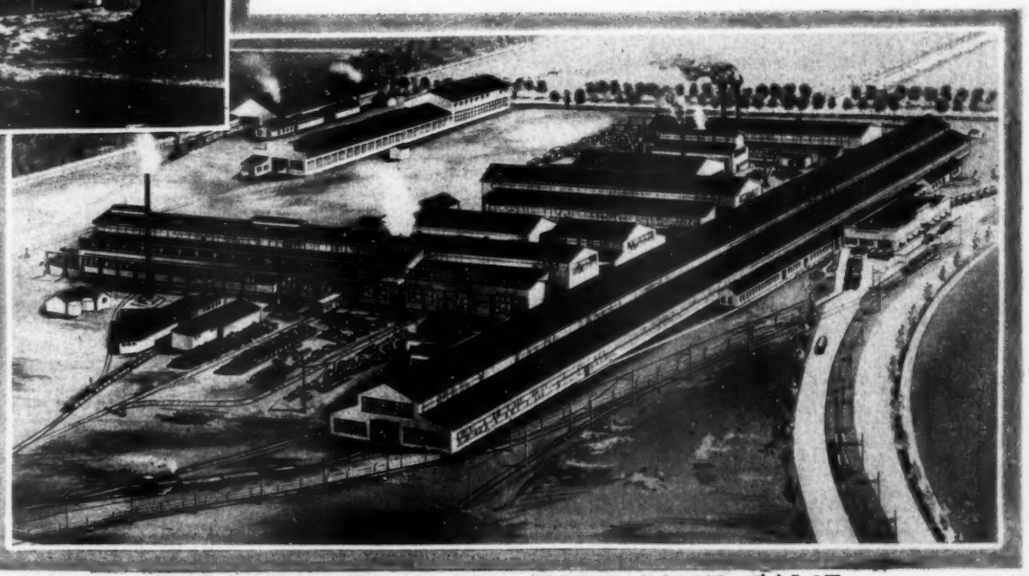

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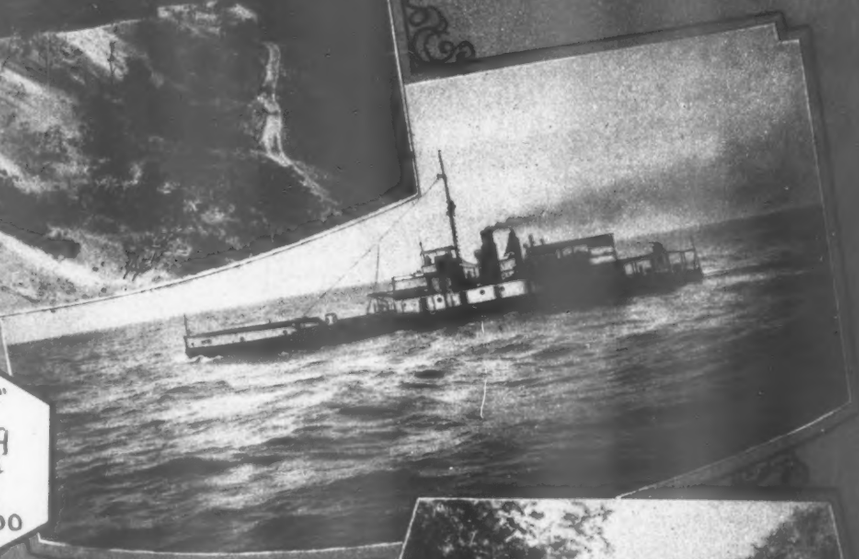
acture and a complete ent for the petroleum or foreign

UPPLY COMPANIES

Methods of Transportation in Venezuela

Standard Oil Co. automobile road between Maturin and Punceres

Standard Oil Co. hauling supplies to Punceres



"Monitor" carrying crude oil on Lake Maracaibo

American equipment used by New England Oil Corp., Ltd. at Motatan del Rio

Flat bottom canoes used to carry supplies to wells at Maturin

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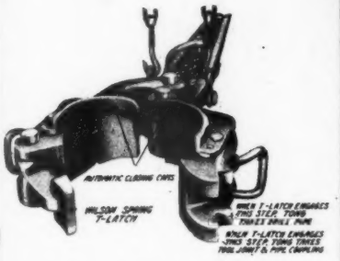

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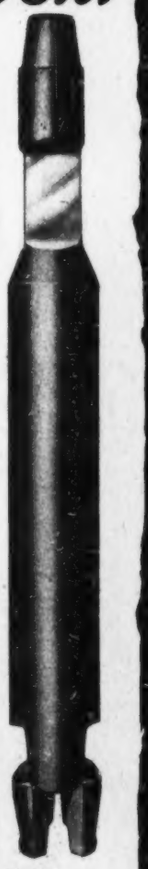

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One of the Mene Grand Producing Wells, Caribbean Petroleum Co.
Joint of 10" casing loaded for trip to Misoa field
Galgo No.1 showing heavy oil and tar at 400 feet, British Equatorial Oil Co., Ltd.
Rio Pauji Well No.1- New England Oil Corp. Ltd.
Cars loaded with asphalt

Interesting Facts on Venezuela

Immense Well at La Rosa Served Notice to Oil Men in All Countries That South America Must Be Considered Seriously.

By Walter M. Dunham

Of the ten South American Republics, Venezuela ranks fifth in area. Its total of 264,000 square miles could include all of the coast states of the United States from Main to Florida. It is closer to the United States than any other country of the South American continent.

It is divided into twenty states, two territories and a federal district. It is bounded on the east by British Guiana and Brazil, on the south by Brazil, and on the west by Colombia. The name Venezuela means "little Venice" and is a modification of the name Venecia (Venice) originally bestowed by Alonzo de Ojeda in 1499, on an Indian Village, composed of pile dwellings on the shore of the Gulf of Maracaibo, which was called by him Gulf of Venecia.

Cities are Small

The Federal District comprises the city of Caracas, the capital of the Republic, together with the parishes of El Recreo, El Valle, La Vega, Antimano, Macarao, Macuto, and the Department of Varagas. The principal cities and their population are: Caracas, 90,720; Valencia, 64,861; Maracaibo, 48,890; Barquisimeto, 32,776; Cuidad Bolivar, 21,595; San Cristobal, 20,759; and Puerto Cabello, 20,000.

That one is born every minute is accepted as a fact, this statement applies to the irrepressible oil prophet, a type of charlatan we have had with us always and whose shadow apparently never grows less despite the rapid whirl of events which renders his calling more hazardous than ill-advised wildcatting. When the Glenn Pool and later the famous Cushing Pool was discovered, both situated in Creek County, Oklahoma, not a few predicted that never again would their equal in daily output be found at home or abroad.

Layman, geologist and politician have at sundry and divers times during periods of apparent over-production of crude oil sadly bewailed and vehemently protested against what they characterized as the profligate waste of our most precious heritage, predicting the early exhaustion of the American oil fields. Despite their gloomy forebodings the intrepid wildcatter continued to discover new oil pools in increasing number with a productivity without a parallel in the past.

Huge Well Finished

The frequency with which new gusher oil pools have been unexpectedly discovered at widely separated sections of this country during the last three years has prepared the oil producer to resignedly accept the inevitable, so that when a report reached the United States last December that a 100,000 barrel well had been brought in at La Rosa, in the Maracaibo basin, Western Venezuela, the information scarcely caused a ripple in oil circles beyond locating its whereabouts on the map.

This gusher at a later date was repeated, this time on the opposite side of the lake, which started a stampede for leases with visions of a duplication of the South oil fields of Mexico. Practically all the major oil companies of this country and England were strongly entrenched in Venezuela with huge blocks of desirable acreage advantageously distributed before the big gusher oil wells were discovered, but the form of contract with the Government gave the right to explore, in most cases at a specific time within the next two years, after which the company is permitted to select and retain under a long term operating lease up to one-half of the area explored, and return the other half to the Government, which in all probability will then be sold to the highest bidder. The land returned to the Government will include some of the most valuable land in the basin, for the reason the time allowed for exploration will not permit the testing of but a fraction of the land under lease.

Field is Near U. S.

Venezuela while a small country nevertheless is one of magnificent distances, extending approximately 800 miles from east to west along the north coast of South America and 600 miles inland. Lake Maracaibo, occupying the center of a mountain-rimmed basin approximately 200 miles in diameter, strategically situated, will be the water shipping port of western Venezuela, being only 1,650 miles sailing distance from New York, which enables a tanker to make the round trip in 18 days.

It may be information to state that from Maracaibo Lake to New York is 48 miles less than from Galveston, Texas, to New York. This advantage can be better appreciated when it is stated that the distance from Tampico, Mexico, to New York is 2,030 miles, and from San Pedro, Cal., to New York, 4,920 miles, requiring 43 days for a tanker to make the round trip. Venezuelan ports command the Panama Canal routes and are convenient supply stations for the increasing number of oil-burning vessels passing through the canal.

More or less activity has been manifest in wildcat or test drilling operations in Venezuela since 1914 with indifferent success until the La Paz and La Rosa wells were brought in at 900 and 1,500 feet respectively, the former on the west, and the latter on the east side of Lake Maracaibo.

Gravity Range Wide

There is a wide range of difference in the gravity of the oil yielded by these wells. The La Rosa product tests 21-22 degrees, while the La Paz crude tests 28 degrees gravity. The latter is considerably higher in gravity, while the former corresponds to the crude from the south fields of Mexico. They are of asphalt base, practically no gasoline or paraffin wax content, rich in lubricant stock and fuel oil, and strange to say, have no sulphur. Production is found generally throughout this region in sands of the Miocene of the Middle Tertiary formations encountered around 1,700 feet, and in some respects are comparable to those of California and Gulf Coast, Texas, in that if not properly screened will flow enormous quantities of sand.

Cable tools have generally been used in the preliminary tests throughout the country, but combination rigs together with the old Austrian circulation method, and exclusive rotary type of drilling equipment is gaining headway. The rotary and core taking methods first introduced in California are being installed. This was a necessity due to the irregularity of the formations.

Information Guarded

But little information has been made public relating to the true geology of Venezuela. What is not known to the outside world of this important matter might constitute a whole library. Almost all the companies operating in the Maracaibo Basin have made detailed topographic and geological surveys of their holdings, unfortunately this material is not available to the public.

To mention Maracaibo Basin is to invite a heated discussion on the crude oil transportation problem, which involves the dredging the Maracaibo bar, or constructing pipe lines to deep water. It has been an axiom of the producing end of the oil business from the completion of the first well drilled for oil to the present day: "Get the oil in sufficient quantities and the transportation will take care of itself." It is the boast of the American engineer that no construction problem is too great for them to solve. So why worry?

Louis G. Huntly, consulting petroleum geologist, of Pittsburgh, Pa., concludes an admirable article on the Venezuelan oil fields, by describing its geology as follows:

"Structurally the Maracaibo Basin is a great geosyncline, being flanked on the east, south and west by spurs of the Andean mountain system. Its outlet to the north was at one time blocked by a dam composed of low folds belonging to the plunging end of the east-west coast range, which crosses the north end of the eastern Andes at an angle.

(Continued on Page 18)

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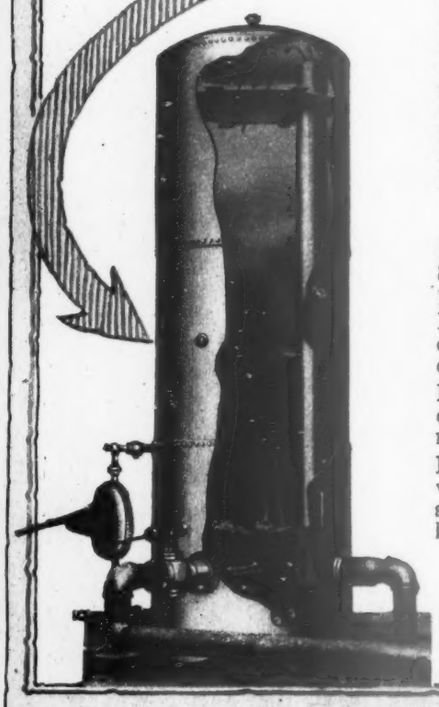

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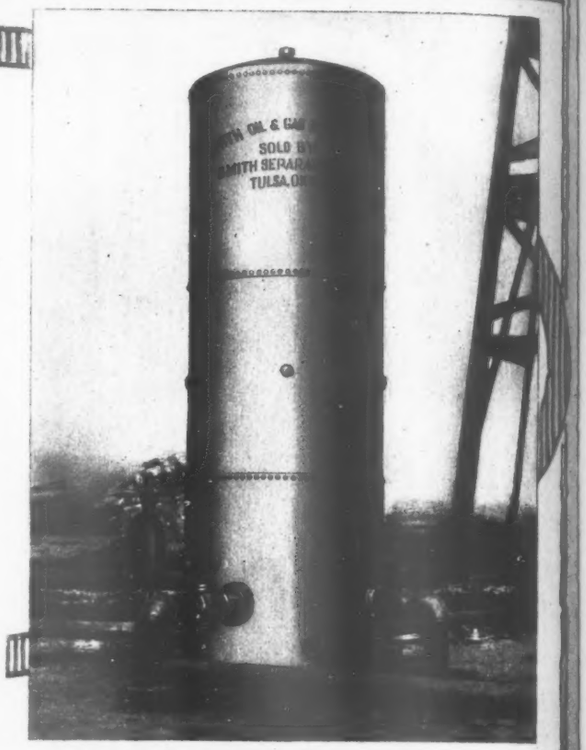


SMITH SEPARATOR COMPANY
TULSA, OKLA.

INTERESTING FACTS ON VENEZUELA

(Continued from Page 17)

"The waters of the basin have in time cut this dam down to its present sea level, but during the past this inland fresh water lake stood at higher altitudes, as shown by the sedimentary lake terraces in the mountains south of the basin, and also the extensive deposits of flat-lying fresh water deposits which at present are found above the present lake level and generally extending from the lake back to the foothills.

"The central sedimentary wedge or prism in sinking has caused much normal faulting in many places in the foothill region, and south of the lake several extensive thrust faults are found. To the west and southwest of the lake in the districts of Miranda and Perija, this thrust, together with that from Colombia, has folded the sedimentary formations in a series of flat-topped anticlines with steep sides, which parallel the main range of the Andes.

Folding Is Complicated

"The folding in the districts of Miranda, Buchivacoa, and Bolivar is more complicated northeast of the lake, as the thrust from the Caribbean basin has buckled the sediments at an angle to that from the Maracaibo basin. The folding in this northeastern region takes several different directions, the prominent one in one district changing to a subsidiary characteristic in another. However, several of these folds have been traced in a northeast-southwest arc in their intersections with the shore of the lake. As the surface of this folding is partially obscured by recent formations, it has been gained largely by trenching and later by drilling. It is possible that other folds will be found to exist as development proceeds.

La Rosa Located

"It is on one of these folds, with a N-60-E trend, that the La Rosa field has been brought in. On another the El Mene pool of the British Controlled Oil Fields, Ltd., has been found. A dry hole has been drilled on another at Maneta, which, however, did not reach the bottom of the Tertiary black shale series (Pauji shales). This is a large area on the northeastern side of the lake, and as both the Dutch-Shell and the Standard are very heavily interested in the region and as both pipe line routes to the coast cross it, one is led to prophesy that it will be one of the first developed, and will probably contain other prolific pools.

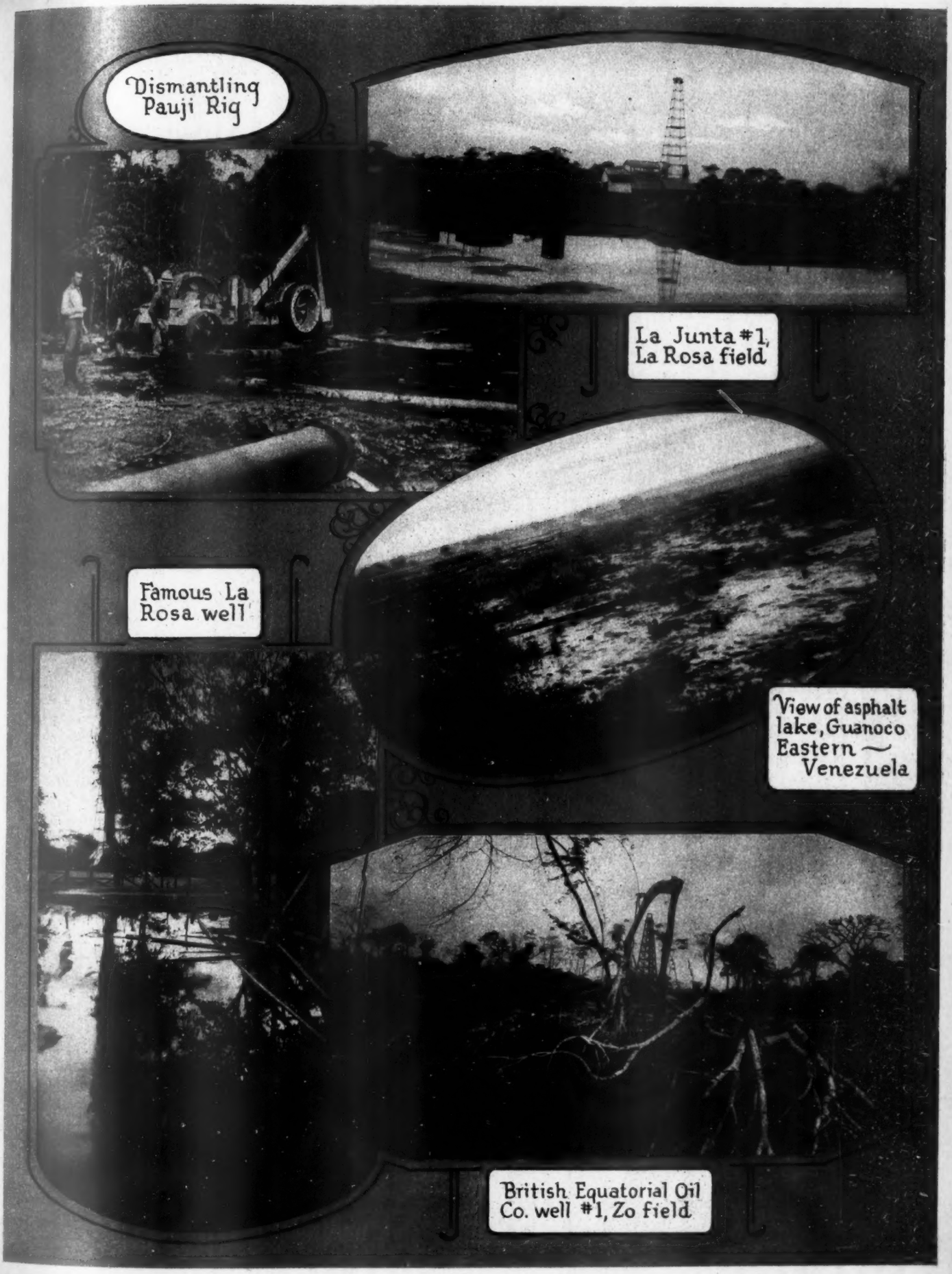
"Attention is called in the generalized geological section to the two thick black shale series, one in the middle Tertiary and the other in the Upper Cretaceous. These are considered the main sources of the petroleum in Venezuela. Above the Pauji black shales are approximately ten oil sands, known in the region east of the lake; while immediately below is another zone of productive oil sands.

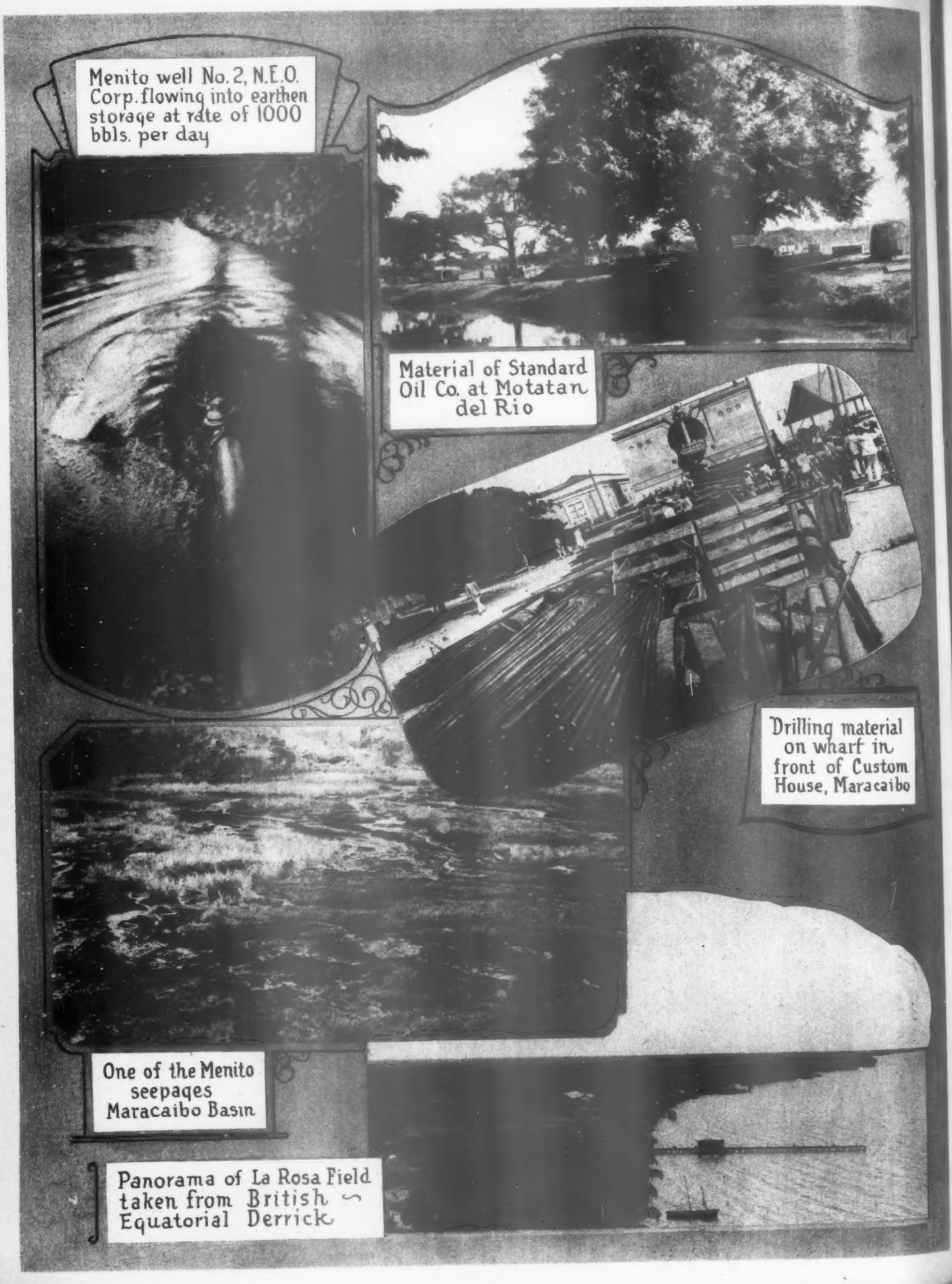
"Production is obtained in the Mene Grande region from both above and below the Pauji shales. The oil sands known in the upper shales are those from which seepages are found to exude in the region east of the lake.

Formations Determined

"The production at La Paz on the west side of the lake is believed to be found only a short distance above the Cretaceous, while the big gas well at Kilometer 24 probably found its production within the Cretaceous. The Cogello Limestone member of the Cretaceous is petroliferous wherever found, and southwest of the lake contains some good oil sands. The production in the district of Colon is from the coal series in the Tertiary.

"Considering that there are two series of petroliferous shales and limestones, aggregating approximately 7,000 feet in thickness, that frequent oil sands are known to exist within this column and above it, that favorable folding and other structural conditions are known which may be expected to have caused extensive accumulations, together with the evidence of the many zones of seepages, and the large area already outlined by widely distributed wells in the Maracaibo Basin, it is safe to predict that this will become one of the world's greatest oil fields."


Dismantling Pauji Rig
La Junta #1, La Rosa field
Famous La Rosa well
View of asphalt lake, Guanoco Eastern Venezuela
British Equatorial Oil Co. well #1, Zo field



Menito well No. 2, N.E.O. Corp. flowing into earthen storage at rate of 1000 bbls. per day

Material of Standard Oil Co. at Motatan del Rio

Drilling material on wharf in front of Custom House, Maracaibo

One of the Menito seepages Maracaibo Basin

Panorama of La Rosa Field taken from British Equatorial Derrick

Many Large Concessions Available in Venezuela

At the recent International Petroleum Exposition and Congress, which was held at Tulsa, Okla., October 8 to 14, Venezuela was the only foreign country to send an exhibit of its petroleum products. This exhibit consisted of a number of topographical and geological maps of the different oil regions, samples of the oil obtained from the most important fields now in operation, fossils and sand, and a very complete collection of photographs showing all the oil fields and many of the seepages and outcrops found in the different states and every detail of the work that has taken place in the proving of the different lands acquired for development by the present operating companies.

A considerable number of people were visiting the Venezuelan exhibit constantly and obtaining information from the Venezuelan representatives about development and conditions in general as affecting the oil industry. The number of people that visited the exhibit clearly showed marked interest of oil men all over the country as regards Venezuela on account of the big wells that have come in during the last few months in the Lake Maracaibo region.

Many Questions Asked

One of the many questions asked of the Venezuelan representatives was whether or not there were any lands still available for leasing in the Maracaibo Basin, as it seemed to be the general belief that all the lands around the Maracaibo Lake were already contracted for by the companies operating there at present.

The Venezuelan representatives explained that there were several good areas still available and that all the concessions that had been granted in the past give only the right of the concessionnaire to select for exploitation one-half of the area included in the contract and that the other half reverts to the Government as National Reserves, and these reserves will be available for new contracts as they are turned back to the Government by the holders of the original concession.

Old Contracts Explained

Several years ago contracts were granted for the exploration of oil in tracts covering several entire districts in the State of Zulia and although the exploration terms for these contracts were longer than those granted afterwards, one-half of the area contained in those districts will also revert to the Government as National Reserves and will be likewise available for new contracts.

As the exploration period provided by the present law is three and one-half years from the time the contract was approved by the Venezuelan Congress, and as a great number of the concessions granted around Lake Maracaibo were approved by the Congress of 1920, the National Reserves derived from these contracts will be turned back to the Government during the year 1924.

It will be seen, therefore, that during the course of the coming year many desirable lands will be open for new contracts and afford an excellent opportunity to new companies or individuals interested in entering this field.

Valuable Leases Available

Of the lands now available perhaps the most desirable are the holdings of the Compañia Venezolana de Petroleo, which are located in the Maracaibo Basin in different parts of the States of Zulia and Falcon, according to Lucio Baldo, oil representative of the Venezuelan Government. The area included in these holdings is approximately 150,000 acres.

This company was formed in Caracas, with Venezuelan capital, for the purpose of acquiring free lots and National Reserves, with an authorized capital of 25,000,000 Bolivars, of which 5,000,000 Bolivars have already been subscribed. This company has established a technical department which will study geological and climatic conditions, transportation facilities, cost of surveying, distances to commercial centers and to shipping points, lumber available in different localities, nature of the water supply and all the factors in connection with their own properties and those belonging to other individuals who may desire to have their holdings examined and their approximate market value determined.

Many native concessionnaires have turned their properties over to this company, and these will be opened in the near future for negotiation, thus considerably enlarging the areas which can be negotiated by foreign companies with the Cõmpañia Venezolana de Petroleo.

Can Secure Oil Rights

Another point which was repeatedly brought up by visitors to the Venezuelan Exhibit was in regard to the oil rights of private land owners. It was explained that although under the Venezuelan Constitution the subsoil of any land, whether privately owned or not, belongs to the Nation, the private owners were given one year, ending July, 1922, in which to apply for the oil rights on their properties, in case that no previous concession had been granted in that particular area. Many of them made their application and obtained exploration permits on their properties, but those who did not take advantage of the privilege granted to them by the law forfeited their right and concessions can be obtained from the Government on these properties as well as on Government owned lands.

The Compañia Venezolana de Petroleo has a special department in charge of answering all inquiries on subjects that may be of interest to companies or individuals desirous of entering the field.

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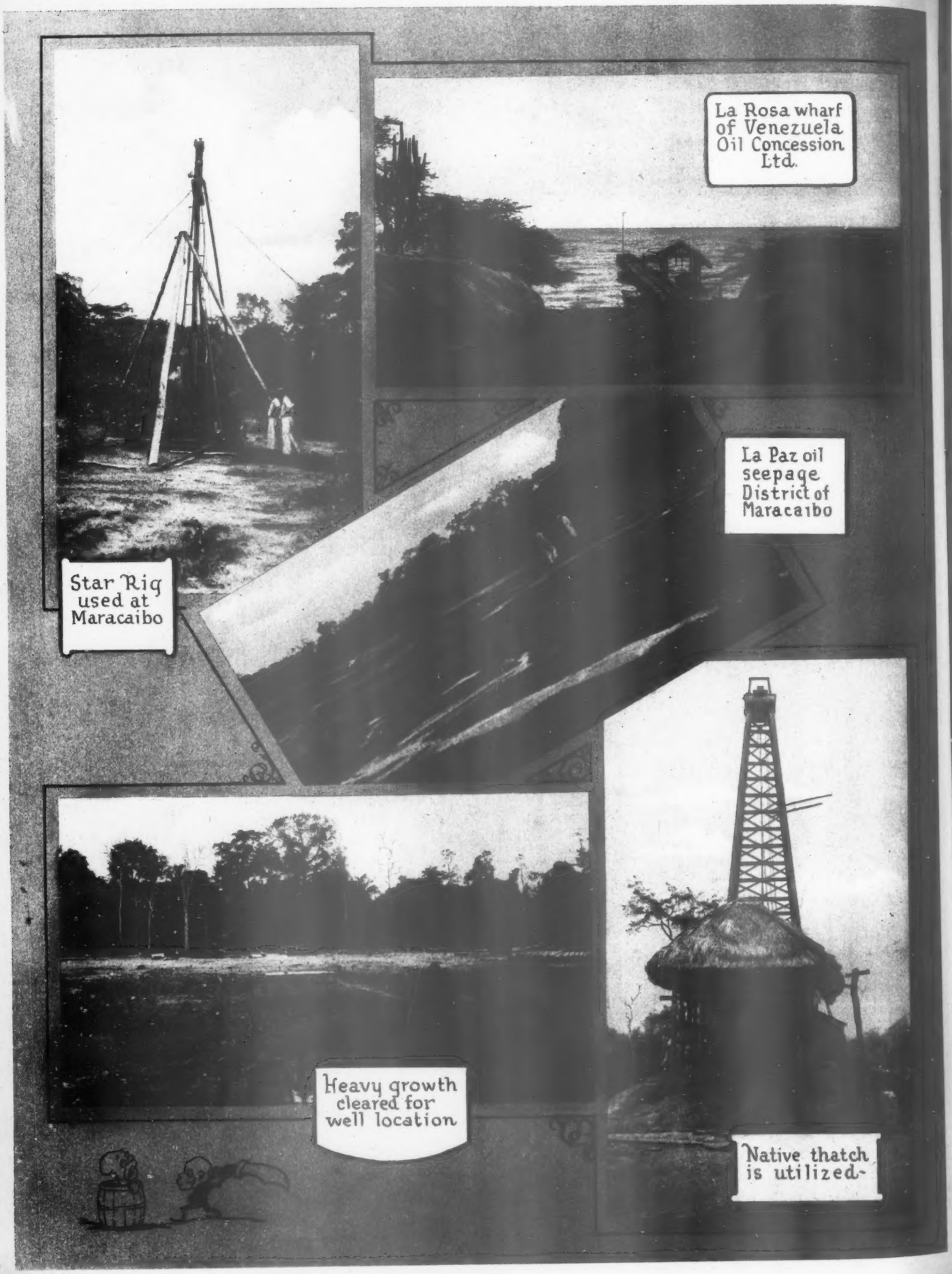
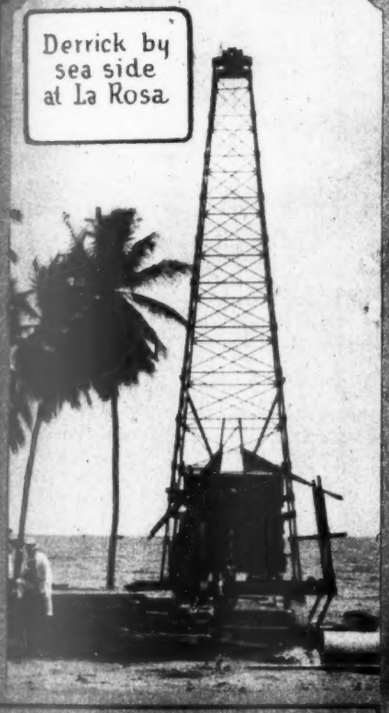

La Rosa wharf of Venezuela Oil Concession Ltd.
La Paz oil seepage District of Maracaibo
Star Rig used at Maracaibo
Heavy growth cleared for well location
Native thatch is utilized-

Timbers on ground in Venezuela



Derrick by sea side at La Rosa

Venezuela gas well

Asphalt seepage on fire, Mene Grande

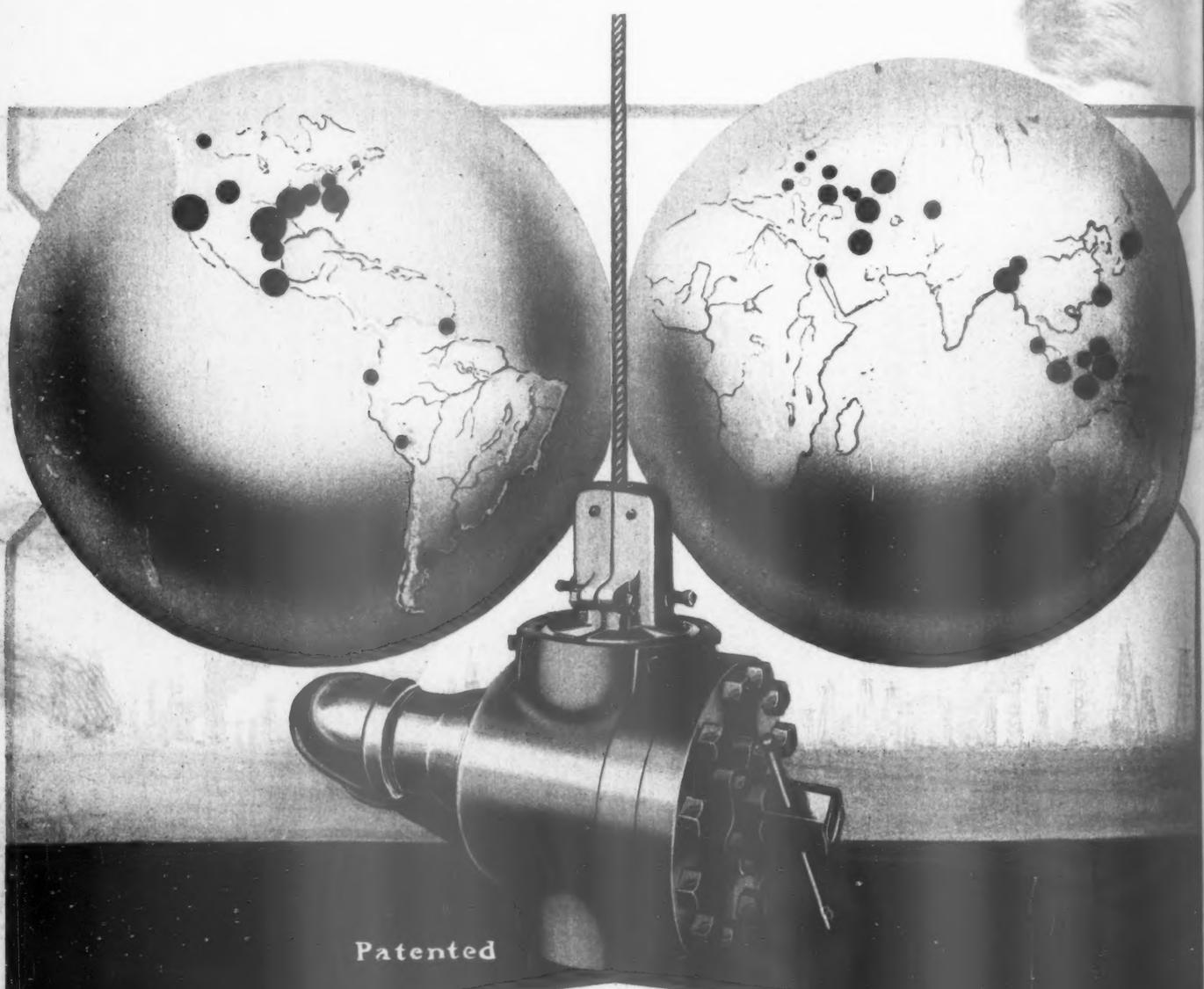
Caribbean Petroleum Company's well

Office New England Oil Corp., Ltd.

"Standard Equipment"

In the Oil Fields of the World

Control Casing Head and Roller Oil Saver assuring safety, speed and convenience. It is unbreakable. Controls any flow of oil or gas in wells instantly. Only four parts in the actual control head. Nothing to get out of order. Not bothered by sand. Does not put back pressure on any flowing well. With Roller Oil Saver in place (as shown below) in the top of the control head, there can be no loss of oil or danger of fire from escaping gas. Permits all drilling operations.



Patented

THE OIL WELL IMPROVEMENTS CO.
Tulsa, Okla.

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Petroleum Law Regarded as Equitable

Oil Business Has Received Considerable Encouragement From Government of Venezuela Where Its Importance is Realized

Individuals and oil companies considering going into Venezuela to develop the petroleum deposits of that country are especially interested in the petroleum law of Venezuela which has been regarded as equitable and practical from an operating standpoint. Among the many industries which have received encouragement from the Government of Venezuela, the oil business occupies a prominent place and, due to its importance, it has been the subject of special legislation to the point that the Petroleum Law, passed in 1918, and revised in 1922, has been considered as a most satisfactory piece of legislation and regulation by all persons concerned.

The principal features of the law are as follows:

Everything which relates directly to the exploration of the National territory for the purpose of discovering carbon and other similar substances, petroleum and other hydrocarbonous substances; to exploration of deposits of the earth, whether they are of a solid, liquid or gaseous nature; to the manufacture and refining of the minerals exploited and their transportation by whatever means may be necessary, is hereby declared a public utility and shall be governed by the provisions of the present law.

Extent of Rights

The right to explore, exploit, manufacture, refine and transport, in the form stated, the substances to which the preceding article refers, shall be obtained by means of concessions granted by the Federal executive.

The concessions do not grant the ownership of the deposits, but only the right to explore and exploit them in accordance with the dispositions of this law.

The concessions to which this law refers are granted at the risk of the interested party, as the nation does not guarantee the existence of the mineral, nor in any case does it guarantee the title. This provision will be set forth in all concessions, as will also article 21 of the National Constitution.

Only the Federal executive may grant the concessions to which this law refers, excepting such as are necessary in the carrying out of contracts or concessions executed under former laws.

Venezuelan and foreign persons or companies which are legally capable of entering into a contract may acquire the concessions to which this law refers, but concessions shall not be granted in any case to foreign Governments or States, to official corporations which depend upon them, to foreign companies which are not legally domiciled in Venezuela, nor to public officials who cannot acquire mines in accordance with the law of mines.

Concessions may be granted for the following purposes:

1. The exploration of definite lots, the surface of which approximately calculated, shall not exceed 10,000 hectares, the concessionaire having the right to exploit the parcels which he may choose and mark out in the same lot, in accordance with this law.

2. The exploitation of those parcels mentioned in the concessions for exploitation, which parcels may have an area up to 500 hectares each, will be granted without prejudice to the rights of third parties, to those who have not previously been given the right of exploitation by the terms of the preceding section, as will also the exploitation concessions and definite lots, whose area may contain up to 10,000 hectares when the lands forming said lots are covered by the waters of the sea, lakes or navigable rivers.

3. The manufacturing and refining of the substance mentioned in this law and extraction of products thereof.

4. The establishment of means of transportation of the said substance and the products thereof.

Acreage Permitted

The total number of acres which the law allows to be held under a given permit or concession is limited to 25,000 (10,000 hectares), but a single holding company is allowed to acquire up to 750,000 acres (300,000 hectares) for exploration and exploitation, or 375,000 acres (150,000 hectares) for exploitation.

LUCIO BALDO
Representative of the Venezuelan government to the International Petroleum Exposition and Congress at Tulsa, October 8-15

In some cases, according to Article 55, Section 4, these holdings may be increased beyond this limit by special permission from the Government.

Taxes

One-tenth part of a bolivar (about 2 cents U. S. currency) for each hectare contained in the contracted lot.

An initial exploitation tax of 2 bolivars (approximately 40 cents United States currency) for each hectare contained in the selected parcels, plus an additional tax of 2 bolivars (approximately 40 cents United States currency) per annum per hectare during the first 3 years, which are increased to 4 bolivars approximately 80 cents United States currency) per annum during the following 27 years and to 5 bolivars (approximately $1) per hectare per annum during the last 10 years of the concession.

Concessions are granted for a period of 40 years with 3 years given for preliminary exploration work.

A royalty of 10 per cent on production, collectable either in cash or kind at the option of the Government. This tax will never amount to less than 2 bolivars (approximately 40 cents United States currency) per ton of mineral, or approximately 6 cents United States currency per barrel. In the case of lands located over 250 kilometers from the sea or Lake Maracaibo, this royalty is reduced to 7½ per cent and on lands covered by water it is further reduced to 5 per cent.

On products refined in the country for local consumption a tax equal to 50 per cent of the import duties which the same products would have paid if imported.

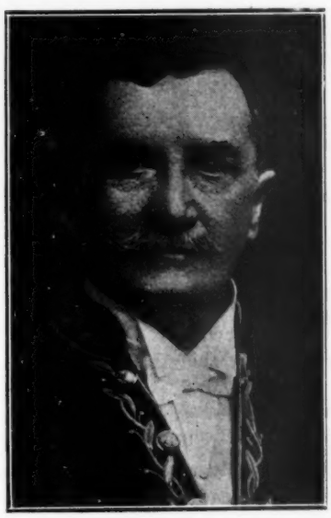
The concessions confer the exclusive right to exploit oil which may be found in the tracts selected, for a period of 40 years; the right to constitute "rights of way," temporary occupation, expropriation of lands for building sites and the right of free entry of drilling machinery and materials.

Complimentary Rights

Concessionaires enjoy furthermore, in accordance with the rights which this law grants to them, the right to constitute rights of way, temporary occupation and expropriation of the lands which they may need; and also the right to free importation of their machinery and material, in accordance with the disposition of the articles of the present section.

Rights of way which it may be necessary to establish on public lands for the works, constructions, lines of communication and transportation, shall be granted gratitously.

Concessionaires have the right to obtain the same privileges on privately owned lands, but must make the necessary agreement with the owners. In case that no agreement can be reached with the owners of the surface for the rights of occupation, the concessionaire may appeal to the Civil Court of First Instance having jurisdiction in the locality, in order that, after appraisal has been made



P. R. RINCONES
Consul General of Venezuela in New York

by experts, one of whom shall be apponted by the concessionaire and the other by the proprietor or by the court when the proprietor refuses to do so, or does not concur in same, the correct amount of damages may be determined, which amount shall be deposited in cash, or in National debt bonds, representing the equivalent amount, in a bank or in a commercial house of recognized solvency. The concessionaire will then be able to commence work immediately. In case the deposit should be made in National debt bonds, the depositor will receive the interest derived from same.

For the expropriation and temporary occupation, the formalities determined by the law governing said matter shall be followed and the necessity of the work will be presumed in connection with drilling and other necessary work connected therewith, and the construction of aqueducts, stores, warehouses, lines of communication and transportation.

Owners of concessions which are covered by the waters of the sea, lakes or navigable rivers, have the right of occupation, which is mentioned in the two preceding articles on the lands of the coast adjacent to their concessions, warehouses, and lines of communication and transportation. This, however, must be done without injury to third parties having preference rights, in which case the formalities of the preceding article as regards the rights of surface owners shall be complied with.

Concessionaires shall be exempt from payment of import duties, provided they comply with all the legal dispositions applicable, on all the instruments, apparatus, machinery and its parts, boats, tools, manufactured iron, containers, vehicles, sanitary materials for hospitals, knock-down buildings, which may be used in the work of exploration and exploitation, refining and transporting and in general, all the effects and utensils which they may import for the work which must be carried out in conformity with Articles 22, 27 and 31 and other dispositions of this law.

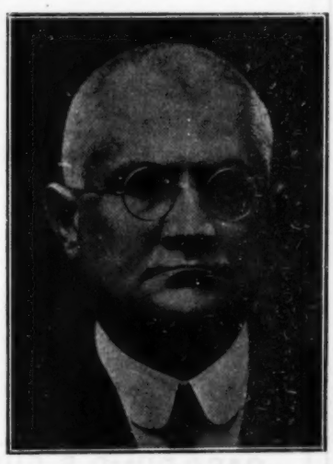
Concessionaires may transfer to other concessionaires enjoying the same right of free importations, the effects which they have imported free of duties.

In case it is desired to transfer any of the material referred to in this article to private parties or to enterprises which do not enjoy the same right of free importation, a permit from the Minister of Fomento is required, which permit shall be granted after an amount has been paid corresponding to what the import duties would have been, had the materials not been admitted free.

Material imported free of duties, and which are not required for carrying on the work may be reexported.

One-half of the area on the concession is kept by the concessionaire for actual exploitation, the other half reverting to the Government as National reserves. Lots of 500 hectares are to be selected leaving an equal and adjacent lot for National reserves.

Lots need not be "checkerboarded,"



DR. PEDRO MANUEL ARCAYA
Minister to the United States from Venezuela

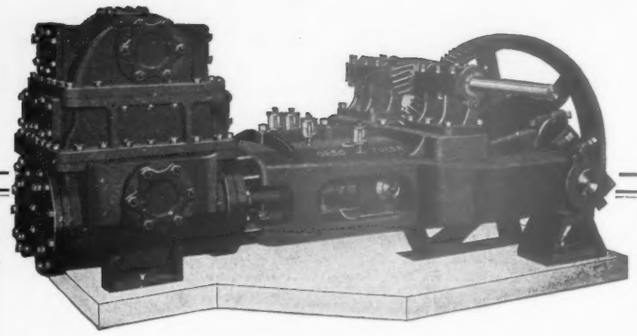
but may be grouped at the will of the contractor, provided an equal and adjacent area is left to the Government as National reserves.

Obligations Entailed

The law does not require the developer to carry out any specific amount of drilling. Article 66, Chapter 3 of the law, covers this as follows:

"Failre to exploit a parcel does not cause forfeiture, but failure to pay the taxes for a period of three consecutive

(Continued on Page 100)



For the Particular Attention

of Pipe Line Operators:

Because in your pipe line work the word **dependability** means so much, we think you will find the pump illustrated above of extraordinary interest. You will like it because

—it is designed especially as a suction pump for pipe-line work, with numerous refinements and improvements that mean perfect operation;

—it has excess strength, fewer parts and embodies only the highest grade of materials;

—altho on the market only a few months, it has already proved itself so successful as to necessitate increased manufacturing facilities.

The Gaso Pipe-Line Suction Pump is available in three sizes—6, 8 or 10x18. Full details will be sent you on request.

GASO PUMP & BURNER MFG. CO., TULSA, OKLA.

GASO PUMPS

for oil field uses

233

OIL OPERATIONS IN VENEZUELA SHOW PROMISING INDICATIONS

By N. O. Fanning

NEW YORK, Dec. 17.—Drilling operations in the prospective oil districts of Venezuela have been confined to a few companies until very recently. Nevertheless, promising indications have rewarded much of the work that has been done in widely separated areas.

Among the operators whose accomplishments stand out is the Caribbean Petroleum Co., which is controlled by the Dutch-Shell combine. This concern this fall had approximately 20 producing wells with a total actual yield of about 15,000 bbls. daily, thus accounting for nearly half the producing wells in Venezuela at that time. Results obtained by the Venezuelan Oil Concessions, Ltd., also a Dutch-Shell subsidiary, stand out as second in importance, if not first. While the wells brought in by this concern to date have not yielded a large daily commercial production, the large potential capacity of its completions augurs well for the future. One of its wells caused a sensation in December, 1922, by coming in with an estimated daily flow of about 100,000 bbls., but sanded up shortly afterward. Another of its completions came in good for about 3,500 bbls. daily of 28 gravity petroleum. The gravity of the oil from the larger well was 21.

Without going further, the operations of the two companies named show the possibilities of Venezuela. The concession of the Caribbean Petroleum Co. and that of the Venezuelan Oil Concessions, Ltd., are on opposite sides of Lake Maracaibo, although both are in the State of Zulia. The intervening territory, measuring about 50 to 80 miles square, is believed to contain oil. Much of this is embodied in Lake Maracaibo. The result of this is that ultimately much drilling is expected to be done in the shallow bed of the lake itself.

Other producing companies in Venezuela are the British Controlled Oil Fields, Ltd., The British Zulia Oil Co. (controlled by British Equatorial, an Anglo-Persian subsidiary), the Colon Development Co., The New England Oil Co., and the Standard Oil Co. of Venezuela.

The work of the principal operating companies in Venezuela up to the fall of 1923 may be summed up as follows:

British Controlled Oil Fields

Number producing wells, 5; average gravity of oil, 32; depths ranging from 675 to 1,205 feet; average production about 340 bbls. daily. Wells drilling, 9.

British Zulia

Number producing wells, 2; depths, 590 to 905 feet; production, nominal; drilling wells, 2.

Caribbean Petroleum

Number producing wells, 20; average gravity of oil, 15 to 17; depths of wells ranging from 443 to 1,915 feet; approximate average daily production, 15,000 bbls. Wells drilling, 18.

Colon Development

Number producing wells, 5; average gravity of oil, 27 to 32.5; production, nominal; depths of wells, 885 to 2,166 feet. Wells drilling, 1.

North Venezuelan Oil

Producing wells, 1, with show of 5 bbls. oil and gas at 1,530 feet in Acosta district, State of Falcon.

New England Corp.

Number producing wells, 2; average gravity, 15 to 18.5; depth of wells, 576 to 1,145 feet; production approximately 800 bbls. daily on pump. Drilling three wells in State of Trujillo.

Standard Oil of Venezuela

Number producing wells, 1; depth, 892 feet; producing about 300 bbls of oil daily. Drilling wells, 9; in five different districts.

Venezuelan Oil Concessions, Ltd.

Number producing wells, 4; average gravity of oil, 20 to 28; depths of wells, 752 to 2,343 feet; average daily production, about 3,500 bbls.

Venezuelan Sun Co.

Number wells drilling, 4, in Trujillo, Falcon and Merida.

The foregoing production figures are only approximations. No exact figures can be given due to the fact that such figures are subject to daily changes.

In all there are 45 producing wells, 52 wells drilling and 65 wells have been abandoned to date. This makes a total of 162 operations which are plainly not sufficient to test out Venezuela's possibilities. Yet results obtained so far have been satisfactory.

DRILLING CAMPAIGN GOING ON IN BOLIVIA

Active preliminary steps leading toward the development of the vast oil deposits that are believed to exist in Bolivia were begun last year. Various companies, American and foreign, took an active interest in this work. One large American company, which was formally incorporated in Bolivia in December, 1921, started drilling in a number of places and carried on active preliminary operations on a large scale, having obtained extensive concessions of oil lands from the government.

The granting of oil concessions and the development of the industry were carried on under the provisions of a general petroleum law. This law seems to be liberal in its terms and favorable to development. Among its salient points are the reduction of the royalty of the government to 11 per cent of the production; the requirement that all holders of concessions shall, within the first five years, sink a well 500 meters deep for each 50,000 hectares; provisions for the development of oil wells in partnership with the government; and a system of taxation of oil concessions, which tends to encourage the putting down of wells.

Among the most interesting of recent economic developments in Bolivia is the notable interest taken in the exploitation of the petroleum fields. Concessions totaling millions of acres have been taken up and large sums appropriated by several of the more important oil companies, both American and foreign, for the purpose of sinking wells. Present production is mainly in the vicinity of Santa Cruz, but active drilling is being carried on as far south as the Argentine border, as well as north and east of Santa Cruz.

An American has recently secured a concession totaling about 300,000 hectares, in eastern Bolivia, which he plans to colonize. As eastern Bolivia offers extremely fertile land, as well as mineral deposits, the establishment of transportation facilities adequate to meet the needs of the country should bring about a notable development in that region. The completion of railroad lines now under construction will offer one outlet by rail to the Atlantic seaboard — the natural route for the trade of eastern Bolivia.

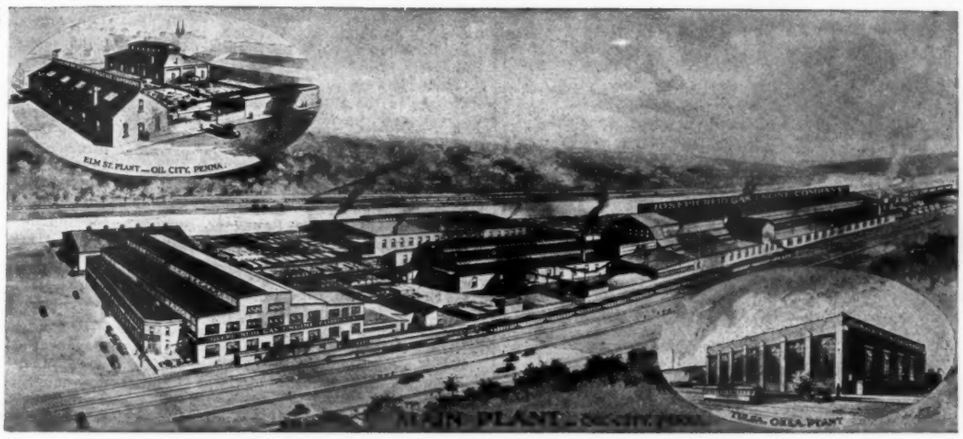
FRENCH OIL CONSORTIUM

Upon suggestion of the French government a consortium of French banks has been formed with a view to taking over and working the concessions obtained by the state, notably the 25 per cent share in the Turkish Petroleum Co. It comprises the Banque de Paris et des Pays Bas, Banque de l'Union Parisienne, Banque Nationale de Credit, and Credit Mobilier Francais, besides the oil refining companies, etc. When the consortium has terminated its preliminary studies it will be transformed into a company to be called the Compagnie Nationale des Petroles.

THE PRINTERS' LAMENT

Christmas comes on Tuesday,
The worst day in the week.
We'll have to labor all day long,
And 'twill do no good to squeak.
—Paul McCain.

Makers of the FIRST GAS ENGINES used in the OIL COUNTRY Installed in 1895



Makers of the FIRST REVERSE CLUTCH used in the OIL COUNTRY for pulling rods and tubing, drilling, etc.

Reid Oil Field Machinery

The Joseph Reid Gas Engine Co. has been manufacturing machinery for the oil fields since 1895. The first gas engine for oil field use was manufactured by us as was also the first successful reverse clutch for oil field use. To be the manufacturers of the first, however, has not been enough; we have been keeping abreast and, perhaps, a little ahead, of the times. To give one example, when it was found that a heavy power was needed for deep wells, we introduced our patented band wheel power, now known as our Type PB. When the work became still more severe, our Type PW, 24-foot diameter Band Wheel Power was brought out. Our gas and oil engines and geared powers as well have been constantly improved to accommodate the changes in oil field conditions.

The Reid line of Oil Field Machinery comprises equipment for every condition. For the shallow fields, we have the Sistersville Type engine and four types of geared pumping powers. The band wheel power has proven very successful in handling a large number of shallow wells. Our heavy geared power and band wheel powers are giving excellent results in deeper territories. The individual pumping unit is particularly well handled by the Reid Reverse Gear Type engine. In addition to pumping the well, it can be used to pull tubing and rods, swab, and is often used to deepen the hole.

For drilling wells, Reid Gas and Oil Drilling Engines are rapidly replacing the steam engine. In a number of instances, Reid Gas Drilling Engines have paid for themselves, in the matter of fuel saved, on the first well drilled and yet the drilling time compares very favorably with steam.

Reid Engines may be obtained to operate on either natural gas or fuel oil. Attachments may be had enabling them to run on gasoline and crude oil.

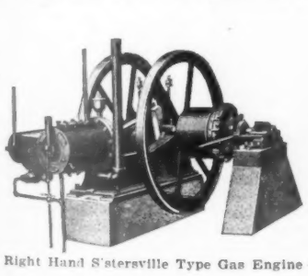
For refineries, we manufacture receiving boxes and manifolds which have proven very satisfactory.

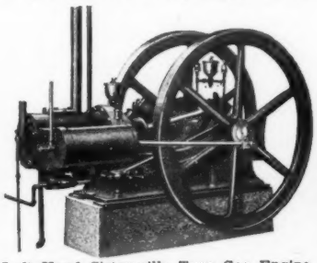
Reid Oil Field Machinery is used in oil fields throughout the world. In addition to the oil fields of the United States, there is Reid machinery in the oil fields of Canada, Mexico, South America, India, Roumania and Africa.

Below are some of the Reid products. Ask for Bulletins describing them.

JOSEPH REID GAS ENGINE COMPANY, Oil City, Pennsylvania, U.S.A.

Branches and Agencies: Marietta, Ohio; Logan, Ohio; Newark, Ohio; Fort Recovery, Ohio; Haynesville, La.; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Bradford Supply Co., Robinson, Ill.; Frick & Lindsay Co., Kentucky Distributors; S. R. Shoup, 708 Pacific Electric Bldg., Los Angeles, Calif.; Oklahoma, Kansas, Texas, Arkansas and Wyoming; Frick-Reid Supply Co., Tulsa, Okla., and Branches. Branch Shop: Tulsa, Okla.

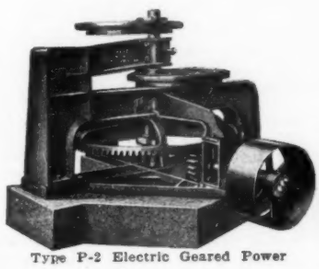

Right Hand Sistersville Type Gas Engine

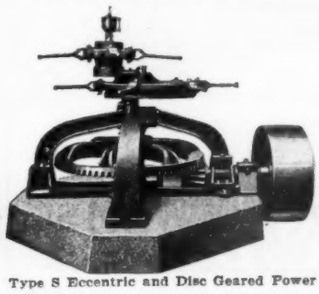

Left Hand Sistersville Type Gas Engine

Left Hand Reverse Gear Type Gas Engine

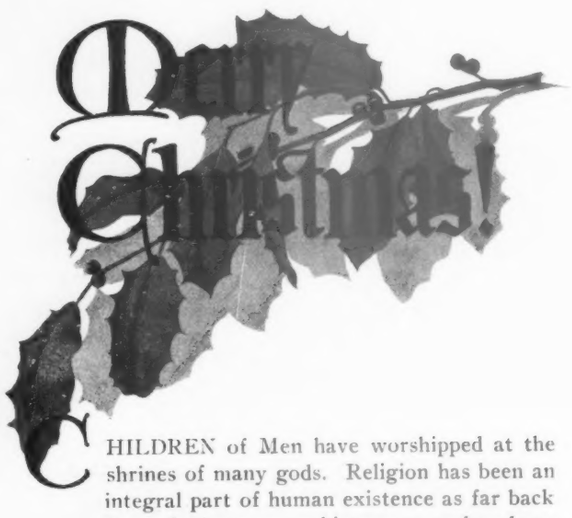
Left Hand Sistersville Type Oil Engine

Type PB Band Wheel Power


Type P-2 Electric Geared Power


Type S Eccentric and Disc Geared Power

Type U Disc Geared Power



CHILDREN of Men have worshipped at the shrines of many gods. Religion has been an integral part of human existence as far back through the ages as history or archaeology can determine.

But of all the customs which have grown out of the creeds of time, no other remains to approach the mystic and idyllic beauty of the modern Christmas of the Christian nations.

Here in America it is a period of peace, good will and reunion. The crusades of history rolled into one gigantic movement could not equal the 1923 pilgrimage of homing hordes at Yuletide!

Then it is that men leave even the Oil Fields. Pipes glow by firesides. Mystery and expectancy and happiness are everywhere. Tiny Tim rejoices and even Scrooge is strangely moved!

And so in happy sympathy and glad attunement with this venerable custom of a thousand nine hundred odd years, we very fervently hope that every Oil Man everywhere has the thing he most desires in the way of good cheer and prosperity, now and throughout 1924.

Frick-Reid Supply Co.

Tulsa, Okla. Pittsburgh, Pa.

West of the Mississippi—Stores Everywhere

EASTERN FIELDS

(Continued from Page 56)

pletion better than the average. It is in the deep sand territory in southeastern Ohio, the Atha Gas Co. and the Midland Producing Co.'s test on the Murray Bowser farm, in Section 13, Bowling Green Township, Licking County. At 31 feet in the Clinton sand the pay was struck and the hole filled up 1,100 feet with fluid. Later it was given an 80-quart shot and responded with a production of 90 bbls. the ensuing 24 hours.

In Section 10, Rush Creek Township, Fairfield County, Weirick & Nodler drilled No. 4 on the Laura E. Strayer farm through the Clinton sand not good for more than 5 bbls. a day. In Section 13, Clay Township, Knox County, the A. H. Heisey Co. completed a second test on the C. C. Green farm, a small gasser in the Berea grit. In the Macksburg Field, Section 16, Aurelius Township, Washington County, S. L. Wolf & Co. completed No. 5 on the Elim Gildow farm, a 4- or 5-bbl. pumper in the Berea grit. In Salem Township, W. F. Meister & Co. have a duster in the Berea grit at No. 17 on the Theobold Daniels farm. In Newport Township, Otis Reckard & Co. have a duster in the Keener sand at No. 4 on the Ella A. West farm. In the same district, the H. B. Huling estate got a light pumper in the Cow Run sand at No. 9 on the O. O. Newlen farm. Elsie Martin & Co.'s test on the Isaac Mendenhall farm is showing for a light pumper. In Independence Township, the C. E. Hammond estate has a light pumper in the Keener sand at No. 7 on the Sophia Roe farm.

Operations in the deep sand territory, the principal source of new production, have declined and there is nothing to indicate an early revival. A good many wells completed during the week fell to the duster list. In Section 10, Brush Creek district, Fairfield County, the Carter Oil Co. completed and shot in the Clinton sand a second test on the A. Huston McVeigh farm and good for 15 bbls. a day.

In Section 12, Ward Township, Hocking County, the Carter Oil Co. has completed and shot in the Clinton sand No. 6 on the Koernhom-Dunlap farm, a duster, 600 feet east of the second test on this farm. In Section 23, Grandview Township, Washington County, F. W. Cochran & Co.'s No. 3 on the Thomas Cochran farm is dry in all sands, and abandoned. In Section 3, Green Township, Monroe County, Staudt & Co.'s No. 3 on the John Starr farm, is dry in the Keener sand. In Section 30, Bethel Township, The Simmons Oil Co. started to drill another test on the V. Handshoemaker farm. In Section 10, Rush Creek Township, Fairfield County, the Montana Oil & Gas Co. started to drill No. 5 on the Levi Kennedy farm. Located 1,000 feet southeast of Sharren & Son's production on the G. P. Stacy farm in Section 27, Ward Township, Hocking County, the Pure Oil Co. started a second test on the W. G. Stout farm. In Section 10, Rush Creek Township, Fairfield County, the Blume Oil & Gas Co. started a test on the John McCandlish farm. In the same locality, the Ohio Fuel Supply Co. is due in the sand at a test on the Alta Barr farm. The Hall Oil & Gas Co. is drilling at 2,500 feet on the C. C. Brandt farm. In Liberty Township, Washington County, Payne & Erps have a duster on the Nancy Scott farm.

West Virginia

Gas wells principally in Ritchie County, predominated the completions in the West Virginia fields. The remainder of the list was made up of light pumpers and dry holes. In Union district, Ritchie County, the most active district, Elder & Straley completed a gasser in the Big Injun sand. In the same district, the Wright Oil & Gas Co.'s No. 3 on the F. M. Stanbury farm and the Star Oil & Gas Co.'s second test on the E. W. Bell farm are gassers in the same formation. On Little Sancho Creek, Meade district, Tyler County, Sharp & Saba have a duster in the Big Injun sand on the E. H. Smith farm. On Ralphs run, McClelland district, Doddridge County, Pentz & Shrader purchased from the Philadelphia Oil Co. its lease on the William Underwood farm and are cleaning out old No. 1, an abandoned gasser, to drill it deeper. In Union district, Lincoln County, Roy McComas has a gasser in the Big Injun sand at a second test on the Oliver Adkins farm. In the same district, the Orlando Oil & Gas Co. and the Superior Gas Co. are due in the sand on the Cynthia Adkins and G. H. Adkins farms. The gas companies are active in Lincoln County. C. C. Wolf is drilling on the W. & A. Wolf farm and the Cambridge Carbon Co. on the Caleb Adkins farm. In Carroll district, H. P. Moore started to drill on his own farm. The Laurel Development Co. is due in the Big Injun sand on the Elizabeth Mahone farm.

Showing Some Oil

In Central district, Doddridge County, the Jackson Oil & Gas Co.'s test on the E. & W. A. Primm farm is showing for a producer in the Big Injun sand. In Troy district, Gilmer County, F. G. Rish & Co. have a small gasser on the Roy Stalnaker farm. In Center district, the McCall Oil & Gas Co. has a duster in the Big Injun sand on the W. B. Boggs farm. In DeKalb district, the Leroy Oil Co.'s test on the Albert E. Bailey farm is a gasser in the Maxon sand. The Eastern Petroleum Co. is testing for oil in the fifth sand on the Campbell heirs' farm in Mannington district, Marion County. In Eagle district, Harrison County, the Grasselli Chemical Co.'s No. 21 on the Consolidated Coal Co.'s property is a light gasser in the Gordon sand. In Center district, Calhoun County, the Hope Natural Gas Co. completed a Big Injun sand gasser on the Walter Scott farm. In the same district, Godfrey L. Cabot got one of the same kind on the J. S. Silcott farm. In Sheridan district, the Coal Fork Oil Co.'s No. 3 on the George W. Dye farm is a gasser in the salt sand. W. H. Bickle has one of the same kind at No. 3 on the J. M. Bennett farm. In Smithfield district, Roane County, Godfrey L. Cabot completed a Big Injun sand gasser on the C. C. Ferrell farm. The United Fuel Gas Co. has a Big Injun sand gasser on the W. M. Shafer farm. In Walton district, the same company has gassers in the Big Injun sand at tests on the W. R. Dodd, Louis Davis and Robert N. Green farms. In Clay district, Ritchie County, the Philadelphia Oil Co.'s second test on the J. R. & R. P. Marsh farm is a Big Injun sand gasser.

Light Pumpers

In Grant district, Ritchie County, the Griffin Producing Co.'s test on the David Garrison farm is good for 5 bbls. a day in the salt sand. In the same district, the West Virginia Heat & Light Co.'s second test on the Newton Law farm is good for 10 bbls. a day in the same formation. When O. C. Satterfield drilled his second test on the C. Newbrough farm into the Keener sand he got a 3-bbl. pumper. In Murphy district, the Hope Natural Gas Co. has a gasser in the Big Injun sand on the F. F. Godd farm. In Union district, the same company's test on the I. M. Hayden farm is dry in the Berea grit. The same company has a gasser in the Salt sand on the Amos Perrine farm. In Center district, Wetzel County, the Manufacturers Light & Heat Co. has a 10-bbl. pumper at No. 4 on the William Knapp farm. In Union district, Ritchie County, the Wright Oil & Gas Co.'s test on the E. C. Kincaid farm is a gasser in the Big Injun sand. In the same district, the Hope Natural Gas Co.'s test on the R. T. Pride farm is a gasser in the same sand. In the same district, C. S. Morris & Co. have rig material at a location on the A. M. Gray heirs' farm. In Washington district, Calhoun County, McIntosh & Scott are building a rig on the Elmira Wilson farm. The Hope Natural Gas Co. is drilling on the J. M. Youst farm.

Drilling and Starting Tests

What is regarded as the most important test well in the Eastern fields, started to drill a few days ago. It is the Hope Natural Gas Co.'s wildcat, a deep

(Continued on Page 100)

Standard
Wieland
Pipe Threaders and Cutters

Before you buy any pipe threader---be sure to see and investigate the STANDARD-WIELAND. Better by far than many competing types, strong, ruggedly built with that superior working ability that comes only with a properly designed machine, built by master workmen.

You'll like the STANDARD-WIELAND, every practical man does.

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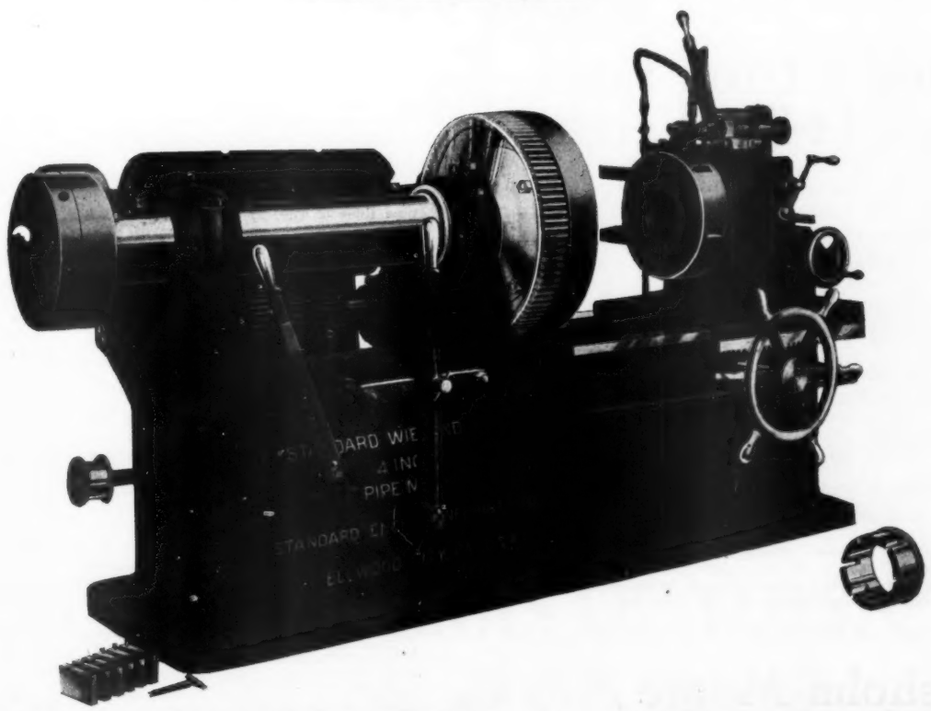

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MATCHLESS TROLLEY
"Easiest to Start-Easiest to Keep Going"

Pulling a 1-ton Load with a 14-lb. Weight

THE above test is graphic proof of the little effort required to start a heavy load and convey it to any desired point, when carried on a Matchless Timken-Roller-Bearing Trolley.

At 14 lbs. the trolley with its 1-ton load, started smoothly and rolled rapidly along the length of the overhead rail.

The Matchless required only about half the pull demanded by any other trolley—ball or roller bearing—when given the same identical test.

Matchless Trolleys in your plant mean less energy used, speedier, action and more output per man.

Chisholm - Moore Matchless "Trolleys," "Cyclone" Chain Hoists, and "Carryall" Overhead Track Systems carried in stock by capable distributors in all localities.

Complete catalog, price and name of nearest representative on request.

The Chisholm-Moore Mfg. Co.
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Hoists Cranes Trolleys Overhead Track Systems
Branches: New York, Chicago, Pittsburgh

N. Y. Acting Mayor Renews His Demand For Gasoline Probe

NEW YORK, Dec. 15.—Acting Mayor Murray Hulbert announces he intends to follow up his demand that the price of gasoline be lowered in New York City. He said he had called the attention of Governor Smith to the matter on October 17, and requested the attorney general be directed to make an investigation why gasoline is higher in New York City than elsewhere in the State.

"Pursuant to the governor's direction," said Mr. Hulbert, "the attorney general made such an investigation. He submits a report of a State-wide survey saying it is a matter entirely for federal action, and indicates he is willing to cooperate with the federal authorities. But, such co-operation apparently has not been sought. The attorney general may be, and probably is, right. But these facts should be borne in mind.

"There are about 13,000,000 barrels of gasoline brought into this State during a year for sale to local consumers. By far the larger part is marketed by the Standard Oil Co. of New Jersey, which fixes the price. Here plainly is a matter of interstate commerce. The necessity for invoking the action of the federal government is, of course, apparent. It will not do merely to invoke federal action and lie supinely awaiting developments. The issue must be forced. Some one ought to do it.

"Contemporaneously with my letter to Governor Smith, I wrote to United States Senator Copeland. I do not know what action the attorney general of the United States has taken at Senator Copeland's request. But I propose to find out.

"Viewed from the standpoint of the public welfare, I can see no reason why the Standard Oil Co. of New Jersey should sell in other jurisdictions more cheaply than its offspring can purchase and retail in New York, where more gasoline is used than in many western States combined. This matter affects so directly a very large percentage of the people in New York City I feel it is not only deserving of but will have further attention. In a few days I shall present a proposal for consideration which I do not believe can or will be ignored."

EASTERN PIPE LINE REPORT

Receipts of crude petroleum during the month of November from the wells by the pipe lines of the eastern division, which make regular monthly reports of their runs, were 2,122,846 barrels. The daily average receipts aggregated 70,762 barrels. This is a decrease of 241,091 barrels in the total and a loss of 5,494 barrels in the daily average, when the figures are compared with those for October. The daily average receipts were 4,551 barrels less than the daily average receipts for November, 1922.

All of the pipe lines included in this report had decreases in their total receipts compared with the October figures.

The receipts of crude oil from the Illinois Field during the month of November amounted to 546,859 barrels. These were reported by the Illinois Pipe Line Co. and the Tide Water Pipe Co. The daily average of these receipts was 18,228 barrels. This is a decrease of 30,008 barrels in the total and a loss of 381 barrels in the daily average. The total runs in the Illinois Field were 19,649 barrels smaller than they were in November, 1922. The November runs were divided by companies as follows: Illinois Pipe Line Co., 518,482 barrels; Tide Water Pipe Co., 28,377 barrels.

Total deliveries by these two companies in the Illinois Field in November were 285,692 barrels. Of this amount the Illinois Pipe Line Co. delivered 194,357 barrels and the Tide Water Pipe Co., 91,335 barrels. The daily average of these November shipments was 9,523 barrels. This is a decrease of 62,121 barrels in the total and a loss of 1,696 barrels in the daily average when the November figures are compared with those for October. The total is 148,990 barrels smaller than the total shipments of the Illinois lines for November, 1922.

The regular deliveries of the eastern lines for the month of November amounted to 3,942,776 barrels and the daily average was 131,426 barrels. This is a decrease of 229,718 barrels in the total and a decline of 3,171 barrels in the daily average when the figures are compared with those for the month of October. The daily average shipments were 34,251 barrels less than those recorded during November, 1922.

All of the pipe lines included in this report show decreases in the amount of their shipments in November compared with October with the exception of the Southwest Pennsylvania Pipe Lines, the Eureka Pipe Line Co., the Macksburg, Lima and Cleveland divisions of the Buckeye Pipe Line Co., the Southern Pipe Line Co., the Northern Pipe Line Co., the Pure Oil Co., and the Indian Refining Co.

The amount of crude oil held in storage by the various pipe lines which are included in this report at the close of November was 14,157,726 barrels. This is a decrease of 346,384 barrels compared with the total for the previous month. This makes a total decrease in these figures during the past two months of more than 600,000 barrels and reflects the improved condition of the industry. The total amount in storage is the smallest since May. It compares with a high mark of 17,009,293 barrels which was recorded at the close of February, 1922.

During the month of November there was an increase of 27,053 barrels in the amount of Pennsylvania oil held by these pipe lines. The amount of Lima oil stored decreased 21,533 barrels. There was a decline of 64,037 barrels in the amount of Kentucky oil held by these pipe lines. The amount of Mid-Continent oil held by the eastern pipe lines decreased 306,912 barrels during the month. There was an increase of 19,044 barrels in the total amount of Illinois oil in eastern pipe line storage.

MOTORSHIP TONNAGE HAS ALMOST DOUBLED

Oil-burning and motor-driven ships continue to increase in popularity, according to Lloyd's Register of Shipping. During the year ended June 30, 1923, the tonnage of motor ships registered by Lloyd's increased from 1,542,160 to 1,668,400 gross tons. This increase of barely more than 8 per cent does not, however, fairly indicate the spreading popularity of the motor ship, which is best shown in the following quarterly returns of vessels under construction:

Quarter ended—	All Countries All vessels	All Countries Motor ships	Great Britain All vessels	Great Britain Motor ships
1922				
Sept. 30	2,705,556	241,622	1,617,045	126,437
Dec. 31	2,954,318	288,057	1,468,599	135,260
1923				
Mar. 31	2,860,072	327,232	1,492,138	157,784
June 30	2,543,856	387,936	1,337,759	221,274
Sept. 30	2,377,697	460,868	1,271,195	264,436

While the total tonnage under construction has continued to shrink during the past year, the tonnage of motor ships building has almost doubled for the world at large and has slightly more than doubled for British shipyards. As a result, motor ships now represent more than 20 per cent of the work on hand for British builders, as compared with less than 8 per cent a year ago. At the same time the average size of the vessels has increased, due largely, it is true, to the laying down of two 21,000-ton motor-driven craft in Belfast. This fact in itself is significant, since no vessels of such large tonnage had previously been attempted.

How Wall Street Continues West to Tulsa

WALL STREET doesn't end at Broadway. Invisibly it continues west from the Money center of the world to the Mid-Continent Oil Field. Broad and Wall in New York is very close to Third and Boston in Tulsa. Wall Street KNOWS before it acts on oil finance. To a great extent, it learns what it desires to know about men, firms, properties and production from the Exchange Banks of Tulsa. Complete reports by wire to Eastern correspondents and depositors. Western depositors benefit by the more intimate knowledge available to us through close personal relationship. It is worth much to be a depositor with the Exchange Banks of Tulsa.

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EXCHANGE BANKS OF TULSA

The Exchange National Bank — Exchange Trust Company

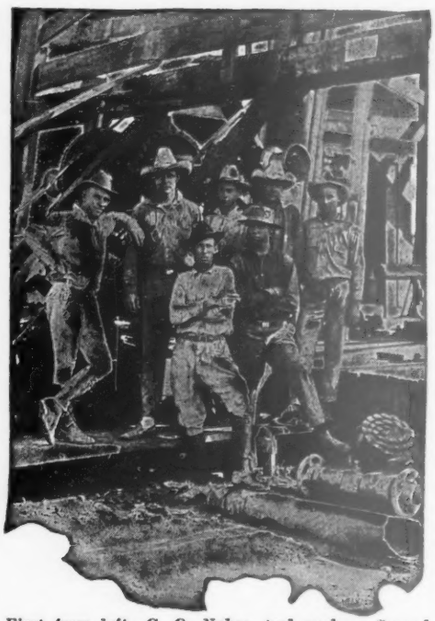
Combined Resources Exceed Forty Million Dollars

This Luling Night Crew Knows Their Stuff

Knock Records Cold With

Reed Roller Bits

Using Slush for Lubrication



First from left—G. O. Nokes, tool pusher; Second from left, F. E. Blythe, head driller of night crew.

Right through 131 feet of hard rock with only one pull out, same being necessary on account of the formation.

Contrast this with having to pull out frequently to refill oil chamber (which was the old method.)

Figure the time thus saved—and the risks of the pull out—and you will know one of the big reasons why popular demand for Reed Bits is sweeping rotary fields everywhere.

The run made in 48½ hours with one set of cutters was done **without a drop of lubricating oil,** using slush for lubrication.

Slush lubrication is a Reed system exclusively and is possible in no other bits; this is admitted in sworn testimony by competitors.

Drilling crews are at their best when furnished with Reed Roller Bits and Reamers.

Anything that lessens the risk of losing a hole, eliminates needless pull outs and speeds up drilling, wins over the driller—right now.

We wonder if there are any drillers, who do not know about this Reed Slush Lubrication System? If there are—we want them to write us for a copy of "Rubiayat of O'Gosh Dingut"—it tells the whole darn story as it came right off the derrick floor.

The strongest rock bit ever built—likewise fastest and safest.

Reed Service Means Now

Reed Roller Bit Co

HOUSTON, TEXAS, U. S. A.

Stocks with Continental Supply Co. and Frick-Reid Supply Co.

CALIFORNIA OFFICE: 1341 Santa Fe Avenue, Los Angeles. Phone 660-68. Ask for Mr. E. B. Wiggins.

EASTERN FIELDS

(Continued from Page 96)

test on the Joseph Gordon farm, near Terra Alta, Portland district, Preston County, West Virginia. Barring accidents, the Hope Company does not intend to stop drilling before reaching a depth of 5,000 feet and if all goes well the equipment installed is such that it will be possible to go much deeper. If nothing happens to delay the work, it is expected the desired depth will be reached next spring. Some innovations for the drilling of deep wells have been made. All the equipment is of extra heavy material or reinforced to meet any emergency. When completed this will have been the first deep test for Preston County. The location is more than 20 miles from production and was made by Dr. I. C. White, State Geologist of West Virginia.

Back in the old defined district, Ritchie County has more test work under way and starting than any other county. In Clay district, Lucas & Mahaney started to drill on the David Riggs farm. In Murphy district, A. H. Smith is rigging up on the H. C. Anderson farm. In the same district, the Hope Natural Gas Co. started to drill on the C. J. Williams farm. Hadox & Summers have a rig completed on the L. T. Smith farm. On Little Sancho Creek, Mead district, Tyler County, C. M. Cunningham has the rig completed on the C. F. Flesher farm. In Union district, Wood County, Bowser & Ekas are due in the sand on the J. W. Marshall farm. In the same district Bennett & Earl are due on the B. F. Frazier farm. In Reedy district, Roane County, the Heck Oil Co. is rigging up on the H. M. Simms farm. In Harper district, the Empire Petroleum Co. is due in the sand on the William H. Hunt farm. In Geary district, the United Fuel Gas Co. has shut down to cement cave at 1,600 feet on the R. K. Ogdin farm. In Washington district, Calhoun County, the Hope Natural Gas Co. is rigging up on the D. W. Chenwirth farm.

Tests in Braxton County

Development work in Braxton County is increasing. In Birch district, the Philadelphia Oil Co. is building a rig on on the G. B. Howell farm. In the same district, the Mill Fork Oil Co., after a long fishing job, has skidded the rig on the C. R. Bourne farm and started a second hole. The same company has part of the rig material at another location on the same farm. In Salt Lick district, the Miller & Simmons test on the R. Q. Dennison farm is shut down to repair rig. In Birch district, J. C. Tims has rigged up to drill on the Susan Baker farm.

Southwest Pennsylvania

For a number of weeks Greene County has furnished all the completions in the southwest Pennsylvania Fields. At no time in a great many years has there been so little doing in local fields. In Gilmore Township, Greene County, the Garrison Oil & Gas Co.'s second test on the Lee J. Garrison farm, is a fair gasser in the Gordon sand. In Springhill Township, the Bennett Oil & Gas Co.'s second test on the Lewis Bennett farm is a gasser in the Big Injun sand. In Whiteley Township, the Manufacturers Light & Heat Co. has a gasser in the Bayard sand on the John C. Gump farm. In Perry Township, Vanvorhees & Co. have a Big Injun sand gasser on the Martha Kennedy. In Center Township, the Carnegie Natural Gas Co.'s test on the Ellsworth Cather farm is a gasser in the Gordon sand. In Springhill Township, Covert R. Phillips & Co. completed a fair fifth sand gasser on the James Estell farm.

Drilling and Starting

In the gas areas there is still considerable test work under way and starting. In Richill township, the Carnegie Natural Gas Co. is rigging up on the John Lazear farm. The Milliken Oil & Gas Co. is drilling on the Bert Wise farm. The Taylor Oil & Gas Trust is drilling on the John Taylor farm. In Springhill Township, the Keystone Oil & Gas Co. started to drill on the Lindsey Dukate farm. In Gilmore Township, the Peoples Natural Gas Co. is fishing at a test on the James E. Rice farm. In Wayne Township, the Hoy Oil & Gas Co. is drilling on the Thomas and J. Hoy farm. In Perry Township, the Fox Oil & Gas Co. started to drill on the Charles Lemley farm.

REGARD PETROLEUM LAW AS EQUITABLE

(Continued from Page 93)

years shall cause forfeiture, except in the case of force majeure. A parcel is considered in exploitation when production is obtained or all steps are being taken to secure production by doing everything necessary to obtain same."

Many companies holding contracts granted under previous laws, have adapted them to the present law in order to take advantage of the beneficial clauses which it contains.

Manufacturing and Refining

The concessionaires of exploitation contracts covering the substances to which this law refers, who wish to exercise their right to manufacture or refine the minerals exploited, will so advise the Minister of Fomento, sending him a description of the factory or refinery to be constructed, together with the corresponding plans.

The Minister of Fomento may impose whatever technical requirements he may deem necessary concerning said projected works and the plans thereof; however, as soon as the notification to the Minister referred to in this same article is made, the work may be commenced, but said work must be done in accordance with all the technical requirements of the Minister, and the buildings shall be so situated that in case of fire, no town will be placed in danger.

Anyone not holding an exploitation contract who desires to establish a refinery in the country for the manufacturing or refining of minerals to which this law refers, shall present his petition to the Federal executive through the medium of the Minister of Fomento, together with the project and respective plans, asking for the concession referred to in this section and setting forth the time within which he will commence his work. If the petition is accepted, the corresponding concession will be granted.

The owners of a factory or refinery, operating under a concession to which the preceding article refers, must receive, according to the productive capacity of the enterprise, the minerals which any exploiter may deliver to him for manufacture or refining, receiving the same price in accordance with the quality and quantity delivered.

Concessions for manufacturing or refining, referred to in the two preceding articles, give to the concessionaire, his heirs and assigns, during the term of 40 years, provided they comply with the dispositions which they apply to them, the right to manufacture and refine the minerals to which this law refers; to construct acqueducts, tanks, warehouses, storage buildings, houses, hospitals, roads and railroad lines, which may connect their different camps with transportation centers; machinery necessary in obtaining production; to redistill the acids which they must use; to carry out all work which the industry may require; to construct the works which may be necessary; and to purchase crude oil to be refined for his own account.

Concessions for manufacturing and refining will not in any case constitute an exclusive privilege.

REASONABLE

There must be a reason for the fact that The Oil and Gas Journal has more Classified Advertisements than all other oil publications combined.

There is a reason—the readers of The Oil and Gas Jaurnal are of the best class. They study the Classified Wants Section with interest and respectfully consider the advertisements of their fellow readers. Your advertisement would interest these men. Mail it now for next Thursday's issue.

The "Dreadnaught" Uses SS-40 and SS-124 Link-Belt Sprocket Chain

THE Frick-Reid Supply Company, uses SS-40 and SS-124 as the standard drive chains on their "Dreadnaught" rotary rig.

Link-Belt SS-40 and SS-124 are especially designed and built for hard drilling service—they have an enviable reputation in the drilling fields based on their actual daily performance.

Note the husky side bars —the famous curled roller—characteristic of Link-Belt Chain.

Look for the double arrow on every link.

1342

LINK-BELT COMPANY, INDIANAPOLIS

World's Largest Manufacturers of Elevating, Conveying and Power Transmission Chains

SS 40 LINK-BELT SPROCKET CHAIN SS 124

REFINING AND MARKETING SECTION

JUDGE INVESTIGATES INDIAHOMA AFFAIRS

MUSKOGEE, Okla., Dec. 15.—The Indiahoma Refining Co., widely known producing and refining concern of the Mid-Continent Field, may be placed in the hands of a receiver, according to Federal Judge R. L. Williams, despite a favorable report last week of a special master who declared the company solvent and advised against a receivership. Judge Williams' attitude was expressed here today at a hearing in which he scored the officials of the company for alleged mismanagement. The judge stated he would continue jurisdiction and would make a further investigation to determine whether the interests of the stockholders could be best be protected by a receivership.

The court criticized the officials in their purchase and management of the Okmulgee-Northern Railroad. He said unwarranted high salaries had been paid the officials of the railroad which is only 9 miles in length. It was brought out that salaries totaling $74,000 had been paid five officers of the railroad. Judge Williams indicated he would announce his decision in regard to a receiver about January 8.

The Indiahoma Refining Co.'s two refineries, located at Okmulgee, Okla., and St. Louis, Mo., are shut down.

PAN AMERICAN PLANS MARKETING STATIONS

Under its contracts with Standard Oil, which will not be renewed for 1924, Pan-American Petroleum & Transport Co. sold about 200,000,000 gallons of gasoline a year. The contract price was based on the tank wagon price in Newark, N. J.

Pan-American Petroleum is now going ahead with its plans to retail gasoline in competition with other marketers. It is acquiring marketing stations in California, which State is the center of activity of the company at present. It has arranged to market gasoline in the Mississippi Valley, with sectional headquarters in New Orleans, and recently bought a 50 per cent interest in a marketing company in Baltimore, known as the American Oil Co. Entrance of the Pan-American Co. into the retail gasoline field adds the most formidable competitor to the list of marketers in many years.

TANK FALL KILLS THREE

KANSAS CITY, Mo., Dec. 15.—Three men were crushed to death and a third seriously injured when trapped by the falling of a large oil storage tank, property of the Kansas City Refining Sales Co. The tank had been lifted on jacks and the men had gone underneath to paint the bottom. One jack gave way. The tank is reported to have weighed more than 50,000 pounds. The dead are Charles J. Conner, 27; Roy Vaughn, 28, and Earl E. Weed, 23. Emmett L. Steele was injured, all of Kansas City, Kans.

ART IN SERVICE STATION

KANSAS CITY, Mo., Dec. 15.—The Monark Gasoline & Oil Co. has just opened a handsome new service station on Swope Parkway, one of the finest in the Central West, said to have cost $78,000. Its style is borrowed from medieval European castle construction. The company now has 39 service stations in Kansas City.

IOWA INDEPENDENT OIL MEN MEET AT DES MOINES FOR CONFERENCE

DES MOINES, Iowa, Dec. 15.—Discussions of a proposed association journal, a proposed mutual insurance company and the "Iowa Anti-discrimination Law," a talk on the oil situation in Russia, a speech on "A Good Roads Program in Iowa," with sidelights on gasoline consumption by autos and trucks, and some opinions on the Newberry-Wakeman tax bill, occupied the time of some 40 attendants at the meeting of the Iowa Independent Oil Men's Association at the Savery Hotel here.

The meeting was opened by an announcement by President L. F. Kuehnle, Dubuque, Iowa, that the request of western trunk lines for a 2½ cents per 100 pounds increase on oil products, from points east of the Illinois-Indiana line, to points west of the Mississippi River, had been denied by the western trunk line committee and it was indicated like action would be taken by the general committee of the Interstate Commerce Commission. A. B. Combs, a Dubuque attorney, represented the oil men in their battle against the raise.

"The victory itself is not so important as the precedent it sets," declared President Kuehnle. "While our shipments from the East are trivial, compared with those from points west, had this request been granted, railroads from the Southwest and West would immediately have been pushing for like increases. Since the increase has been denied at the first request, it probably will be so treated in the future."

Fred White, chief engineer of the Iowa State Highway Commission and president of the National Association of Highway engineers, outlined a plan for better roads, declaring hard surfaced roads increased mileage a gallon of gasoline, but also increased travel at a still greater rate, so that hard surfaced roads really meant more business for the oil men.

After considerable discussion of proposed trade journal it was decided to publish the paper monthly on a co-operative and collective plan, the cost divided according to the number of copies each dealer buys. It was finally decided that 30,000 copies a month would be printed to start, costing about 1 cent each. The publication is to be known as the "Independent Topics" of the Iowa Independent Oil Men's Association. Distribution will be made by the dealers themselves in any method they see fit, but preferably mailed with statements of accounts, or given to customers at stations. Its matter will be facts about the oil situation of an educational nature. The plan is partly based on the educational campaign of the Standard Oil Co. through Iowa to let the people know the facts of the oil industry.

Lafe S. Collins of Knoxville, said in discussing insurance his firm carried its own insurance, setting aside about 25 cents on each $100 in property a year for fire insurance and about 20 cents on each $100 each year for burglary insurance, and that in the five years the firm had carried out that policy the fund had grown to $75,000. Mr. Collins related tales of his early competition with the Standard Oil Co., a situation he said would be prohibited by the anti-discrimination laws, and declared that no one present would be in the oil business now was it not for the law.

Mr. Collins said he started a business in Knoxville when coal oil, there being little gasoline used then, sold for 25 cents a gallon, but a week later had dropped to 4 cents a gallon.

"I got every kid and every person possible to buy every gallon possible from the Standard for 4 cents a gallon, then I turned around and sold it in neighboring towns for about 15 or 16 cents a gallon. My competitors thus paid for my first two stations," he said.

The next meeting of the association will be held in Des Moines, Iowa, February 14, and will be the annual. An expert legal adviser to interpret laws of interest to oil men will be present and officers will be elected. Jobbers will again entertain the visitors with a luncheon and other program. A two-day session will be held.

DOWNWARD TREND OF LIGHTER OILS CONTRASTS WITH GAIN IN HEAVIER

By N. O. Fanning

NEW YORK, Dec. 15.—One of the outstanding developments in oil prices during the last two years is the downward trend of light crude oil and the lighter products of crude, as against a gain or steadiness in heavy crude and the heavier products.

This phenomenon is particularly surprising when it is remembered that in 1920 and 1921 the oil trade was faced with a possible shortage of high-grade oil and an oversupply of heavy crudes. Now the situation is almost the reverse. It promises to become further pronounced in the next few months.

The explanation of this important change in the oil price situation is the unusually large production of high grade crudes which occurred just at a time when it was least expected. At the same time, production of heavier crudes fell off rapidly, thus making the change more acute. It was never expected that a huge supply of light oil would be uncovered on the Pacific Coast, let alone that it would be transported in large quantities through the Panama Canal to eastern refineries. At the same time the Powell Field, on top of the decline in Mexia, topped all records for production of a single American field, reaching a peak of approximately 350,000 barrels daily. Improved refining methods, particularly those making for an increased yield of gasoline, also have accentuated the oversupply of high grade products.

At present the oil industry faces another rapid change. To all appearances, Powell production has almost vanished as a big factor in the oil situation, while the production of the California light oil fields seems to be on the wane. Output of Panuco heavy crude oil, on the other hand, is gaining.

On the consumption side of the ledger, there is a further gain in gasoline use in prospect, while at the same time, the

(Continued on Page 120)

TO DISTRIBUTE OIL OVER BARGE CANAL

BUFFALO, N. Y., Dec. 17.—Medina, Albion and several other ports of the barge canal between this city and Rochester, will be used as distributing centers for local trade by the Standard Oil Co., as soon as its plans for the erection of large storage tanks are complete. The company is already following the plan, using tanks successfully operated for more than a year at Albion.

The tank equipment at Medina will be extensive. Much land has been optioned. Large tanks will be erected on barge canal frontage.

With the completion of the tank system, the Standard Oil Co. will install an extensive fleet of steel barges which will transport gasoline and other petroleum products direct from the Hudson River to all the distributing centers which it is proposed to establish throughout the length of the State waterway.

The barge canal distributing centers will greatly reduce the company's volume of railroad patronage. The steel barges used will be loaded direct from tank steamers at Albany, which will ply between that port and the big Standard refineries at Bayonne, N. J., eliminating railroad haulage between the seaboard and points in Central and Western New York. Part of the fleet of oil carriers will be in operation at the opening of navigation next spring.

PETROLEUM COKE NOW BEING SOLD IN TEXAS

WICHITA, FALLS, Tex., Dec. 15.—The Texhoma Oil & Refining Co. of Wichita Falls recently shipped a car load of petroleum coke, said to be the first manufactured in a crude oil refinery in Texas. It is a new product that is a residue after, by a cracking process, gasoline has been extracted from fuel oil. It accumulates during the extraction of gasoline and is taken from the plant once a week. The supply is said to be limited but the company is selling the product at $10 a ton, whereas the cost of coal in that territory is $14 a ton.

J. B. Joyce, petroleum engineer of the Texhoma Co., says petroleum coke contains 16,000 British thermal units per pound, whereas coal coke contains 14,000 units and coal 11,000 units.

MUTUAL TO KEEP K. C. OFFICES

KANSAS CITY, Mo., Dec. 15.—Regardless of whether the Mutual Oil Co. and the Continental Oil Co. of Denver merge, the Mutual will retain its general offices in Kansas City, according to information believed from a reliable source. It is possible a few of the executives will go to Denver but the business organization, otherwise, will not be disturbed—for a considerable time, at least.

MIDDLE STATES REFINERY

P. D. Saklatvala, president of Middle States Oil, announces that the corporation's refinery recently acquired at New Orleans is now having a filtering plant and storage capacity added, and is expected to be in operation by February 1. He further said the Middle States' current income will be sufficient for the refinery and storage plant development and other expenses, and that no additional financing will be necessary.

Every product of the Dubbs Process when cracking fuel oil or topped oil is of equal or greater value than the original charging stock

The fuel oil run raw and run only once through the Process will yield an average of

40 per cent gasoline
20 per cent gas oil
35 per cent fuel oil

and a commercial coke which has a market value of $6.00 to $14.00 per ton, depending on location

The coke alone will pay a large part and in some cases all the royalty charged for the use of the Process

Universal Oil Products Company
Owners of the Dubbs Process
208 South La Salle Street Chicago

Use of Silica Gel in Petroleum Refining

Advantages Claimed Include Reduced Quantity of Distillate, Elimination of Re-Run Distillation and Greater Gasoline Yield

By Ernest B. Miller

Silica gel is by this time known to a great many technical men, but a brief description of its structure and some of its characteristics due to this structure, may be welcomed by those not already familiar with the same.

The word "gel" does not accurately suggest the physical nature of material as used, but rather refers to its condition at one stage of its manufacture. As actually used, it is a hard, glassy material, with the appearance of a clear quartz sand, and of the chemical formula SiO_2. The thing that differentiates this unique material from ordinary sand, however, is its highly porous structure, and especially the size and uniform arrangement of these pores.

It is made by mixing, in proper proportions and in a pre-determined manner, solutions of sodium silicate and sulphuric acid. After several hours this mixture sets to a homogeneous jelly-like mass, which is called hydrogel. This hydrogel is then broken into pieces about one inch in size, and thoroughly washed to free it of sodium sulphate and excess acid. It is subsequently dried in a carefully regulated manner until it has shrunk to constant colume (about 10 per cent of its original volume), and is then known as silica gel, and ready for the final activation necessary before being used in any of its many applications. Before this final activation, silica gel may contain as much as 41 per cent of its own weight of water, even though it has been dried down to minimum volume and is to all appearances quite dry.

It is most fortunate that a material so chemically inert and able to withstand such high temperatures is capable of being put into the structural condition above described, since it can, therefore, be used almost universally without damage either to itself or to the products with which it may come in contact.

The question naturally asked is, what life does silica gel have when used over and over in practical industrial processes? The final answer to this question cannot be given as yet, since there appears to be no actual deterioration in efficiency with repeated use and the life of the material in constant use will be determined by the completeness with which physical losses of the silica gel can be avoided. The type of apparatus developed in which to use silica gel is such as to reduce physical losses of the gel to a minimum, but since the latter is nearly always used in pulverized form, and is circulated continuously, and mixed with the gases or liquids from which it is designed to absorb certain constituents, an absolutely perfect recovery of all the gel entering the system is, of course, impossible. The loss is, however, too small to constitute a burdensome item of expense, nor will it be in any way a source of inconvenience to the process in which it is being used.

Description of Apparatus

During the past four years wehave designed, constructed in ourown shops, and thoroughly tested a great variety of apparatus in which to commercially use silica gel. It was our aim to perfect one type of equipment that could be universally applied to all gas adsorption problems, and a second type to handle all applications to liquid purification. Except in special cases where extremely high pressures must be maintained during the treatment of gases, the continuous type of absorber using pulverized gel as illustrated diagrammatically in Plate No. 1, has proved applicable to every industrial problem that has to date come to our notice.

Likewise, in the case of the treatment of liquids, we are able to use a combination of standard equipment to accomplish the refining of any non-aqueous liquid.

In some cases, as with lubricating oils and waxes, it is necessary to provide means for heating to a moderate temperature; but this has readily been accomplished without any change in the general character or arrangement of the integral parts of the plant. Such a plant is shown diagrammatically in Plate No. 3.

The silica gel is pulverized to about 200 mesh for use in this plant, and is brought in contact with the gas mixture by means of screw feeders, which discharge the gel into the upward moving gas stream at the base of each of the three adsorption chambers as indicated. The velocity of the gas is such as to carry the pulverized gel along with it through the adsorption chambers, which consist of a nest of water cooled tubes. These tubes serve the double purpose of thoroughly mixing the gel and gas, in addition to their principal function of removing the heat resulting from the liquefaction of the gas being absorbed in the pores of the gel.

The gas mixture, with the gel still in suspension, discharges from the top of each adsorption chamber into a cyclone separator, where a separation of the gel from the gas is effected. The gel so separated falls down by gravity to a screw feeder immediately beneath, which in turn discharges into the gas entering the next adsorption chamber to the right. The gas leaving the cyclone is conveyed, by suitable pipe connections, to the next absorption chamber to the left. It is thus accomplished that, considering the entire system of adsorption chambers collectively, the gel and gas move through the plant in opposite directions; the gel moving to the right, the gas to the left.

In each adsorption chamber, as the gel moves from left to right through the plant, the saturation of gel with respect to the gas being adsorbed increases, until maximum saturation is attained in the last chamber to the right, where it meets the incoming gas. The passage of the gas, on the other hand, being from right to left, is becoming more and more stripped of liquefiable constituents in each adsorption chamber, and leaves the system after contact with the incoming activated gel in the adsorption chamber on the extreme left. The exit gas passes finally through a tubular type of dust collector (see Plate No. 2), which recovers all the gel not separated out by the last cyclone. Such recovered gel is then returned to the system as shown.

The saturated gel is discharged from the last cyclone on the right directly into a multiple hearth, muffle heated activator which is in nearly every respect similar to standard ore roasting furnaces. The temperatures required are, however, much lower and make it possible to use an all-metal construction with asbestos insulation on the outside. The combustion gases used for heating this activator do not come in direct contact with the gel itself, so that the product absorbed previously by the gel may be recovered from it in a practically pure state. Plate No. 2 shows a typical flow sheet for the recovery of gasoline from natural gas,—hence the condenser into which the gasoline vapors from the activator are discharged. After the gel has passed downward through all the hearths of the activator, it is completely restored to its original condition and is ready to be returned to the starting point. This is very satisfactorily accomplished by means of a blower, which is in closed circuit with a cyclone separator located over the cooling hopper at the left of the plant.

The equipment described above has been used for a great variety of problems and is, so far as we can determine, equally well adapted to practically all industrial applications involving the recovery of removal of a liquefiable gas or vapor from a mixture of gases.

Plate No. 2 is a general drawing of an adsorption unit giving more complete details of its various integral parts. The foregoing description of flow sheet applies as well to this drawing.

Oil Refining Plant

For the refining of liquids, it is essential that the gel be pulverized to about 200 mesh for otherwise the time required to reach maximum saturation with respect to the impurities being removed from a given distillate would be so great as to be prohibitive from a practical standpoint.

A study of the flow sheet illustrated in Plate No. 3 will show that in this case also we have employed a continuous and counter current scheme of bringing the gel and liquid to be treated into contact. This is accomplished by an arrangement of standard types of mechanical agitators and rotary vacuum filters. The Oliver Vacuum Filter and the Bethlehem Foundry & Machine Corp. agitator have been employed in all of our work to date. This equipment is so arranged as to give intimate contact between the gel and oil, in three distinct stages, and thereafter effect a complete separation of the two. The crude oil enters the system at the right and is thoroughly mixed with the gel in No. 1 agitator. The mixture flows into No. 1 filter tub, where the gel is picked up on the surface of the filter drum, which is covered with a cloth, and the oil is sucked through the cloth into the interior of the drum. The drum is moving clockwise, and the gel cake is scraped off as shown, so that the process of separating the oil and gel is continuous.

The oil or filtrate so obtained is advanced by means of the small centrifugal pump, (shown connected to the drum of the Oliver filter), to the agitator in No. 2 stage, where it is again thoroughly mixed with gel that is discharged from No. 3 filter. The mixture of oil and gel is discharged into the tub of No. 2 filter, where the gel and oil are separated by the suction of the latter through the filter cloth, similarly to the operation in No. 1 stage. The gel scraped off the drum in this stage enters the agitator in No. 1 stage, so that the mechanical action is the same for each stage. The oil to be refined is therefore being advanced by successive stages to the left through the plant, whereas the gel starts at the extreme

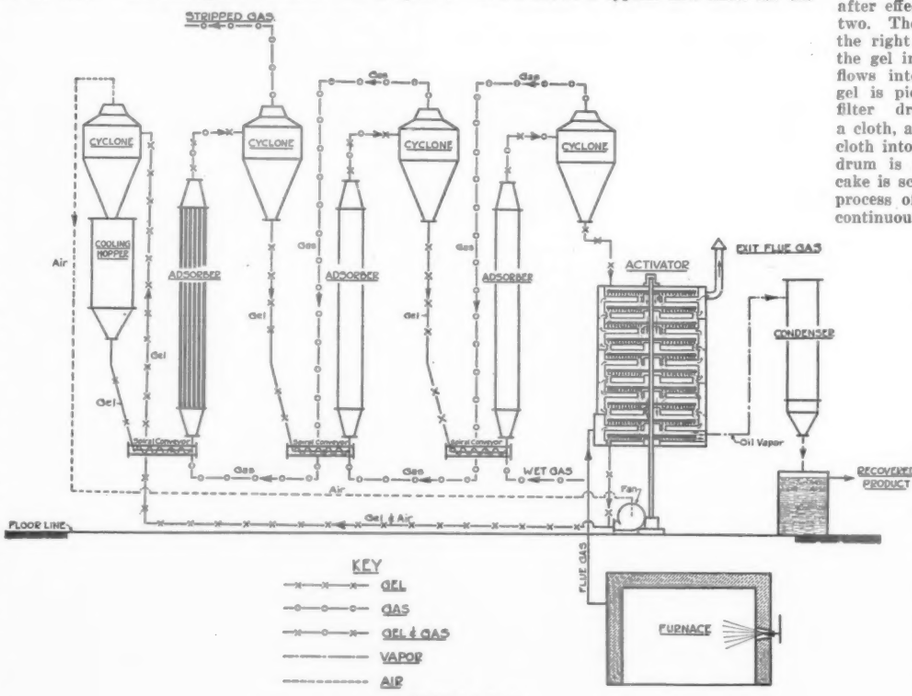


PLATE NO. 1
FLOW SHEET FOR GAS ADSORPTION PLANT

When Powell Broke Loose

Humble needed tanks, and needed them badly. They called on P. I. W. with the result shown above. In less than four days from receipt of the first order a solid trainload of 10 *complete* 55's was enroute to Corsicana, making record time. Following the first train came a second and third, all in less than two weeks.

The Humble farm at Corsicana is shown below. In the foreground appears a veteran, P. I. W. field crew. The progress of the work can be seen. Ready for oil in less than three weeks!

That's P. I. W. Service

THE PETROLEUM IRON WORKS COMPANY

SHARON, PA.

New York St. Louis Tulsa Houston Casper San Francisco

left and progresses toward the right, counter-current to the direction of the oil. The gel discharging from the right hand filter is therefore saturated with impurities, whereas the liquid discharging from the left hand filter has been completely refined.

In refining petroleum oils, the activation of the saturated gel is done in two stages. The primary activator is a multiple hearth, muffle heated type, similar to the one before described in connection with the gas adsorption plant. The function of this primary activator is the practically complete removal and recovery of all oil in the pores of the gel, together with the small percentage of free oil wetting the exterior of the gel particles. The oil so covered is condensed in the condenser shown connected to the activator, and may be further refined or disposed of in any manner desired.

The gel discharged from the bottom of the primary activator contains only a trace of the oil originally present, but is usually somewhat darkened in color by the impurities of the crude oil. In the case of highly cracked gasoline, a certain amount of polymerization of gum forming compounds takes place in the primary activator, leaving a small percentage of the same on the surface of the gel. We, therefore, found it necessary, in order to maintain the full efficiency of the gel, to use a secondary activator, whose function it is to burn off the small residue of oil or gums that may be still adhering to the surface of the gel particles. This secondary activator is a simple steel cylinder rotating within a brick combustion chamber, and so arranged as to utilize the high temperature combustion gases, which are thereafter used to supply heat to the primary activator. A very small amount of air is admitted along with the gel entering the secondary activator, so that complete combustion of the carbonaceous matter may be effected during the gel's passage there through. The completely activated gel is discharged from the secondary activator into an air lifting system similar to that described for the adsorption plant, thereby completing the circuit of the gel back to its original starting point.

Plate No. 4 shows the general layout of a complete refining plant with a capacity of 3,500 barrel per day. This plant is 85 feet long and 28 feet wide, and occupies therefore a relatively small floor space compared to its capacity. Units up to 5,000 barrels per day have been completely designed and require very little more room than the above mentioned 3,500-barrel unit.

Oil Refining

There are two very different and distinct operations that go hand in hand in the complete processing of crude oil by the refiner.

The first has to do with dividing up the original crude by distillation into the well known fractions, gasoline, kerosene, lubricating oil, etc., in accordance with their respective boiling points. This is accomplished by fractional distillation and is capable of endless variety as to character of apparatus used and products obtained.

Distillation of the lighter fractions from crude oil is carried out in what may be termed primary stills. These have until very recent years, been of the batch type, and no great care was taken to equip them with efficient factionating columns, since only a rough cut was made, with the idea that after chemical treatment of the original distillate a final and more careful distillation would be made to obtain gasoline of exact boiling point range. Gasoline therefore, as now refined, undergoes two complete distillations to obtain a finished product; one in the original or primary still; the second, after chemical treatment, in what is known as the re-run or steam still.

It is apparent, therefore, that one of the two distillations mentioned is occasioned by and supplemental to the chemical treatment to which the distillate is subjected during the refining process. The necessity for this second distillation grows out of the formation of asphaltic compounds, resulting from chemical reaction between the sulphuric acid used and unsaturated hydrocarbons present in the distillate being treated.

Any incentive to make a final cut of gasoline on the primary stills is therefore lacking so long as a subsequent distillation after chemical treatment is a necessary part of the refining process.

In the case of kerosene it has likewise been customary to finish the refining operation with a steam distillation, so as to leave behind in the still all the objectionable compounds produced by treating the oil with sulphuric acid. It may thus be seen that distillation has in the past been so interwoven with chemical treatment of oils that the two have been inseparable companions.

When we speak, therefore, of refining petroleum oils in terms of existing practice, we must figure on distillation after treatment as a most necessary step in such process.

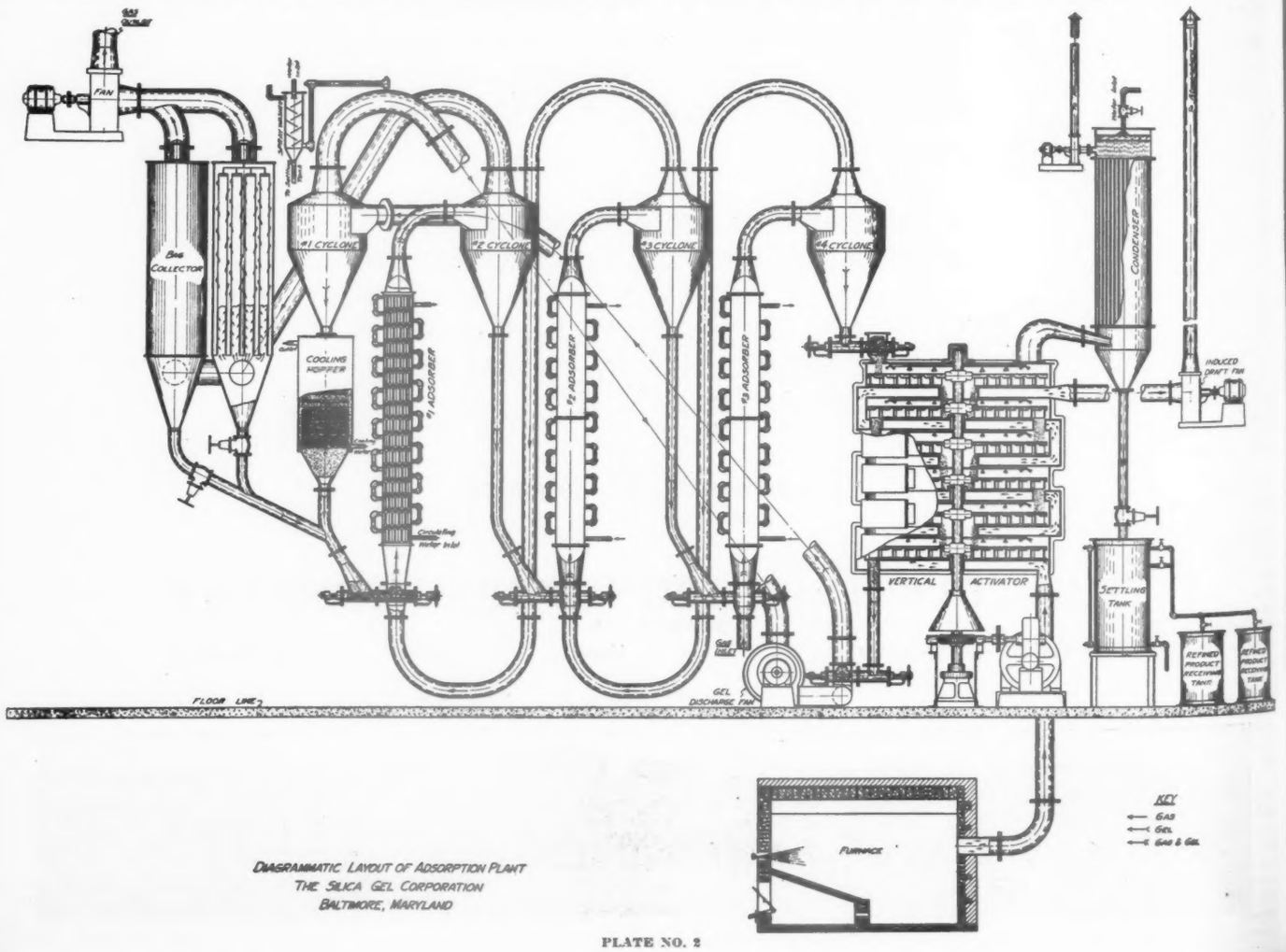
Definition of "Refined" Oils

What is there in petroleum oils, in the way of impurities, that must be removed before they earn the title of "refined" products? The answer is, of course, sulphur.

What is it, for instance, that differentiates high grade Pennsylvania gasoline, kerosene and lubricating oil from the corresponding products obtained from the Mexican crudes? It is nothing more or less than the respective amounts of sulphur present in these two crudes. Remove the excess sulphur from the Mexican distillates, and in each fraction so treated you will have a finished product in all respects and equal to the best that can be obtained from the purest Pennsylvania stock. This statement is made as the result of an intensive study for over three years, in which distillates from crudes of every known variety have been treated for the complete removal of sulphur by silica gel. This work has definitely established the fact that whenever an oil falls short of meeting the requirements of the various uses to which it is customarily put, this failure is due entirely and solely to an excess sulphur and may always be corrected by the removal of such excess.

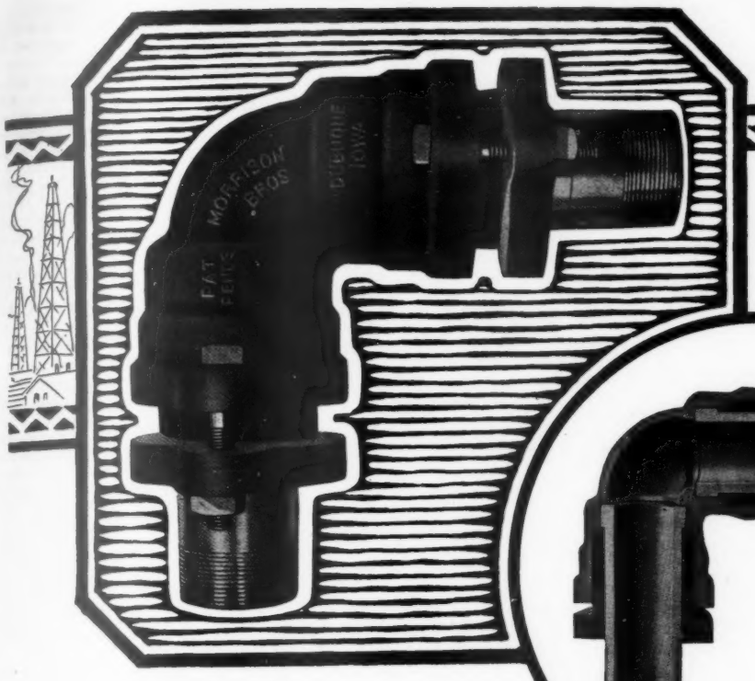
This is no longer a mere theory or matter for speculation, since it is now possible with silica gel actually to effect a complete removal, if necessary, of all sulphur from any oil under discussion. It is consequently possible, for the first time, actually to demonstrate the correctness of this statement, since heretofore chemical means of removing sulphur from high sulphur distillates was the only method available, and was so inherently inadequate that only partial removal was actually attained. With silica gel as a means of complete separation of sulphur compounds from the pure hydrocarbons present, we are able, in each case, to observe the behavior of an oil free from sulphur.

The selective adsorption by silica gel of sulphur compounds from the crude distillate is a purely physical phenomenon and consequently leaves no products of chemical reaction in the oil to be later removed by distillation. We have, therefore, eliminated the necessity for distilla-



DIAGRAMMATIC LAYOUT OF ADSORPTION PLANT
THE SILICA GEL CORPORATION
BALTIMORE, MARYLAND

PLATE NO. 2



Oil Equipment Headquarters

Why MORRISON SWING JOINTS *are* LEAK PROOF

MORRISON BROTHERS Swing Joints are unconditionally guaranteed to serve satisfactorily and to **not leak.**

Unlike ordinary swing joints, there is no metal-to-metal contact in the Morrison joint. A special packing bears all the pressure. Its use makes the joint flexible without any possibility of wear. The joints are always tight, yet they move freely even under pressure.

Ordinary joints, with their metal-to-metal contact, are difficut to move when tightened to prevent leakage. When they become worn sufficiently to become flexible they invariably leak and cause oil waste.

The uncommon ease and convenience with which the Morrison swing joints are handled and their entire freedom from sticking and wear have brought them into exceedingly wide favor.

This is but one item of the most complete line of oil equipment manufactured—that of OIL EQUIPMENT HEADQUARTERS. Send for complete catalog illustrating, describing and pricing every item shown at the right. Write today.

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Everything in Oil Equipment

BRASS PRODUCTS—
- Self-Closing Truck Tank Faucet
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- Self-Closing Barrel Faucets
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- Self-Closing Angle Valves
- By-Pass Valves
- Angle By-Pass Valves
- Straight Check Valves
- Curb Pump Angle Valves
- Hose Nozzles
- Frost-Proof Drain Valves
- Emergency Valve for Truck Tank
- Foot Valve
- Angle Foot Valve
- Automatic Fillers
- Automatic Vents
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- Thief Cap and Vents
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TRUCK TANKS—
- Welded
- Riveted

TANKS—
- Bulk Storage Tanks
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- Filling Tanks
- Water Storage Tanks
- Air Receivers
- Fuel Oil Tanks
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ROTARY OIL PUMPS—
- Single and Double Units

MISCELLANEOUS—
- Grease Kettles
- Agitators
- Unloading Racks

Morrison Bros.

"OIL EQUIPMENT HEADQUARTERS"

tion after treatment as one of the steps in refining, and thereby not only save the actual cost of the same, but avoid also the accompanying distillation losses. The physical removal of sulphur compounds by silica gel leaves the distillate so treated absolutely neutral chemically and entirely free from the objectionable polymerized products that result from the action of sulphuric acid on unsaturated hydrocarbons. This is especially important in the case of cracked gasolines and distillates from crudes, high in aromatic forms of hydrocarbons. The California oils are typical examples of the latter, and have presented to the refiner problems that have not been economically solved by chemical methods of refining. The fatal defect of sulphuric acid as a means of removing sulphur impurities from oils, lies in its utter lack of discrimination between the perfectly good unsaturated hydrocarbons present and the sulphur compounds whose removal is desired. If, for instance, we had a cracked gasoline distillate containing 25 per cent sulphur, and 20 per cent unsaturated hydrocarbons, and decided to attempt the complete removal of the sulphur by treatment with sulphuric acid, we could not attain our object until most of the 20 per cent of unsaturated hydrocarbons were destroyed by the reaction with the acid. This would mean a shrinkage in volume of the oil being treated that is prohibitive. It is therefore customary, when acid treatment is used, to effect only a partial removal of the sulphur impurities, since a more complete extraction would result in very great loss to the refiner.

In the days when low sulphur crude oils were sufficiently abundant to meet all demands, the refiner could produce a fairly low sulphur product without a heavy acid treatment of his crude distillates. Gasoline dreived from Pennsylvania crudes, or from the better Mid-Continent grades, will average as low as .03 per cent sulphur, even before refining. It is obvious that a very light chemical treatment is sufficient to prepare such a distillate for the market. Unfortunately, however, such high grade crudes from a comparatively small proportion of the total now required for the immense demand created by the modern use of automobiles. Most of the new crude oil production is of the new crude type and is confronting the refiner with a problem, which, it is our belief, cannot properly be solved by chemical means.

To further complicate the problem, the great increase in the proportion of gasoline made by cracking processes has resulted in a distillate to be treated that is not only high in sulphur, but contains unsaturated hydrocarbons which, as described above, react with the very sulphuric acid that is aimed primarily at the removal of the sulphur compounds present.

It has been thought, heretofore, that unsaturated hydrocarbons, even though free from sulphur impurities, were undesirable constituents of kerosene. They were held responsible for the smoky burning of cracked kerosenes, and little attempt has been made to utilize the kerosene fraction resulting from the cracking of heavy oils. We have conclusively shown, however, that owing to the impossibility of complete removal of sulphur from cracked products by chemical treatment, without a simultaneous elimination of the unsaturated compounds originally present, it was never possible actually to determine whether the sulphur or the unsaturated hydrocarbons were to blame.

With the aid of silica gel as a means of complete removal of sulphur from such cracked products, without the corresponding elimination of the unsaturated hydrocarbons, we are able for the first time to decide which is the real offender.

As will be shown by actual lamp tests on kerosene of this character, it is only necessary to effect the removal of the sulphur compounds to obtain an oil of fine burning quality, even though the percentage of unsaturated hydrocarbons is but slightly reduced.

Carbon Formation in Automobile Engines

Perhaps no subject of technical nature is of more popular interest today than that of good gasoline. Every automobile driver knows that sooner or later his engine becomes fouled with carbon, to the point where its efficiency drops to such a low figure as to demand his reluctant attention to this necessary evil. He would willingly buy a higher priced fuel if by so doing the time between such cleanings could be materially lengthened. But there has been no criterion by which he could choose between the many well-advertised motor fuels so profusely offered by the well appointed filling stations that line our principal thoroughfares and highways; nor is he quite sure whether the gasoline or the lubricating oil is most to blame for his carbon trouble. In this confused state of mind he more often dismisses the problem by blaming it on the carburetor. There is most certainly some truth in each of the three accusations, and in the hope of obtaining some practical information on this subject, we started several months ago a series of engine tests.

Silica Gel and Other Adsorbents

In nature we meet with a number of porous materials, such as Fuller's earth, bauxite, charcoal, etc., which, when properly activated, possess to a very limited extent an internal structure similar to silica gel. But since the exact dimensions of the pores of such materials absolutely fixes their absorptive power, it is not to be wondered at that in nature there has not been discovered any material of just the right structure to satisfy the exacting requirements of a highly adsorptive material adapted to commercial conditions.

The natural products mentioned do all possess very marked ability to clarify the liquids in which coloring matter is held in suspension. In this respect most of them are superior to silica gel. It has been shown by extensive tests we have made, however, that when materials have pores so large as to permit the ready entrance of solid particles, those pores are too large to bring about the separation of two liquids that are in true solution. In silica gel, the preponderant proposition of the pores are of the proper size to effect the selective absorption desired, but it nevertheless

(Continued on Page 151)

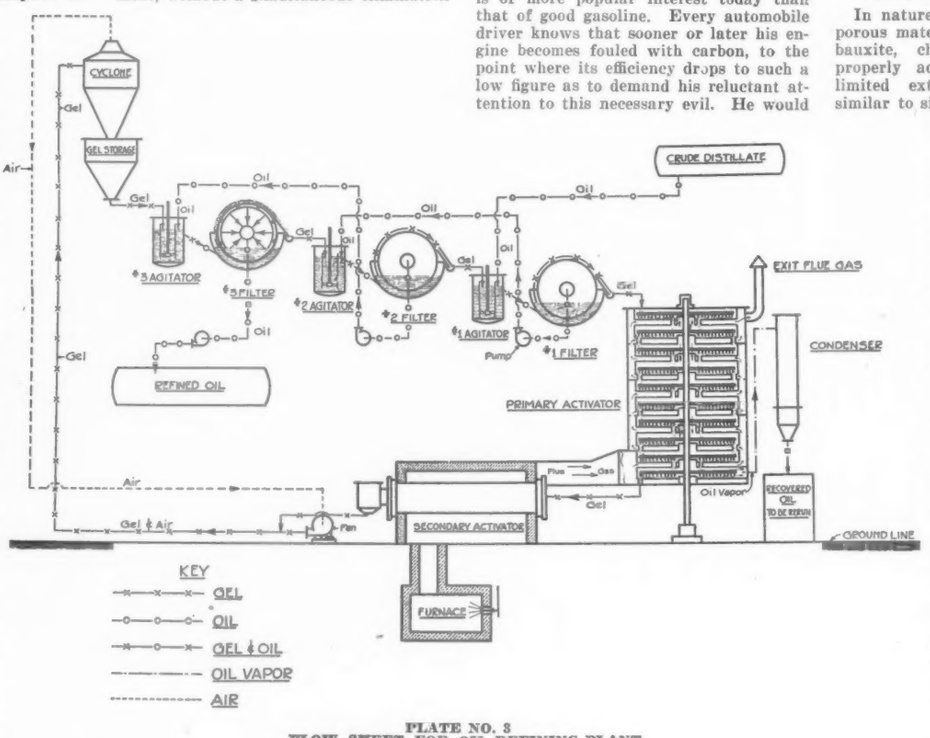


PLATE NO. 3
FLOW SHEET FOR OIL REFINING PLANT

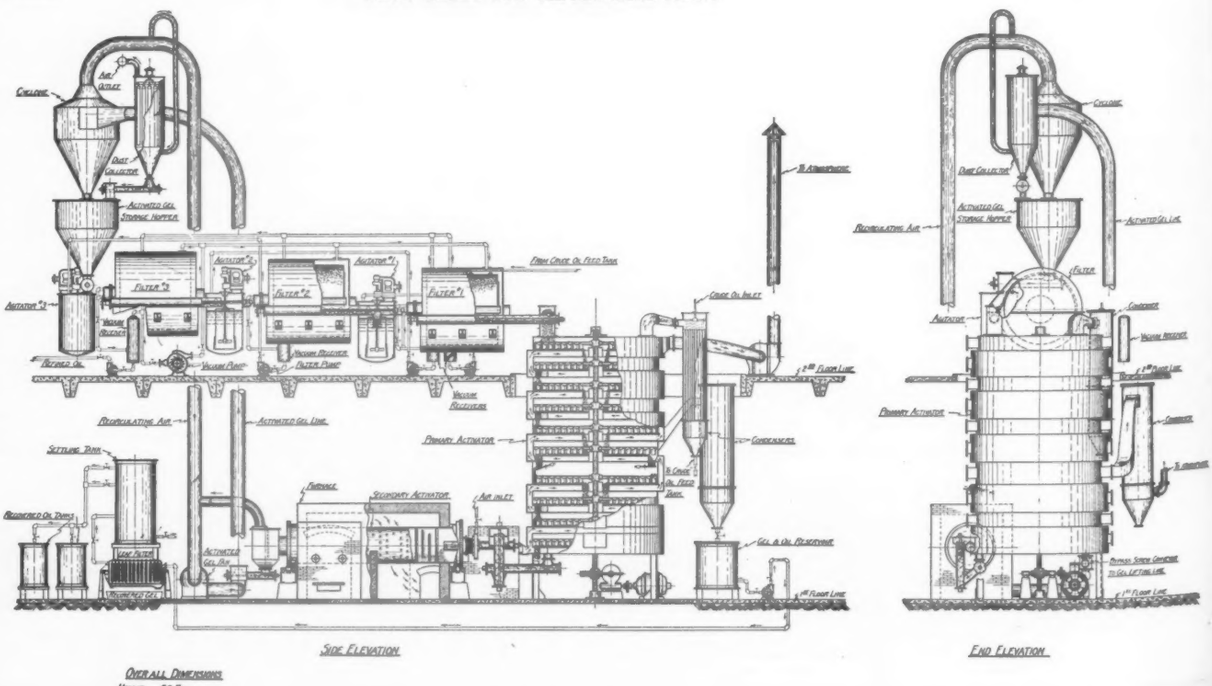
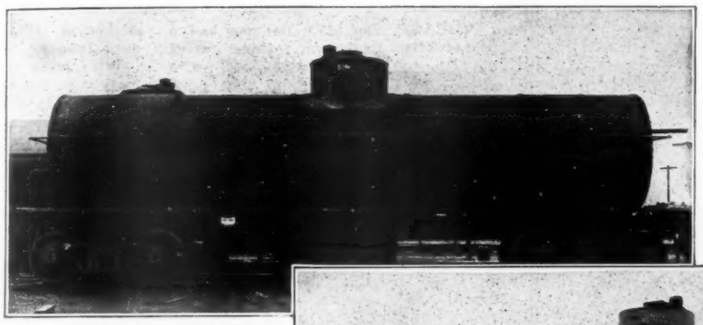


PLATE NO. 4



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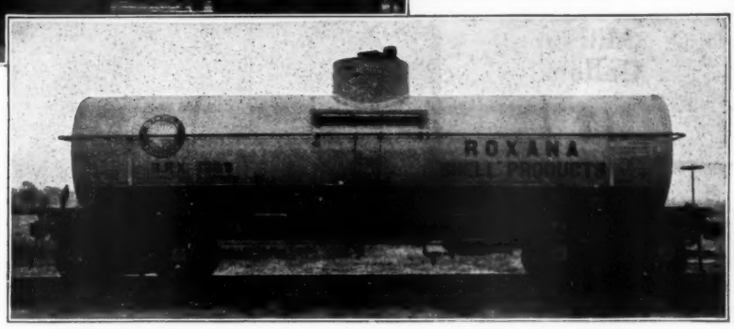

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A well painted tank car is equal to two bulletin boards in every town that the car goes through and every crossing that it passes.

Proper painting operations reduce cost of maintenance and protect investment in addition to keeping cars in service.

DEGRACO TANK CAR PAINTS have long been a standard with car owners who demand real service with good appearance.

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DEGRACO PAINTS are sold through branch offices with warehouse stocks in all principal cities.
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PRICE TREND IN CHICAGO IS UPWARD

Exceptional Now to Find New Navy Gasoline Under 7-Cent Bottom Price. General Expectation Crude Will Be Advanced Soon. Natural Gasolines Continue to Weaken. Fuel Oil Maintaining Strong Position.

By Ralph T. Baker

CHICAGO, Dec. 17.—Refiners had a market after their own making during the past week with the result that practically every product marketed in the Chicago region was affected to a more or less degree by the upward trend of prices. Natural gasolines were the outstanding exceptions to this rule, with kerosene merely holding steady and distillate maintaining its former unsteady position.

The development in the price of New Navy has been gradual but none the less sure. Four weeks ago some sales were reported at a fraction under the 6-cent price. They were the exception to the rule, but considerable material was available at 6 cents. Today it is an exceptional event to find Navy gasoline under the 7-cent bottom price. The trade is paying 7¼ cents for much of this grade and with a continued open season such as has blessed the Chicago territory, the price may go still higher, many men in all branches of the industry believe.

There are many factors which have affected the recent definite increase in gasoline prices. As has been explained in The Oil & Gas Journal previously, the excellent motoring weather is one of the outstanding reasons for the large sales of gasoline. Of recent days, however, there has been a tendency to slow up on New Navy shipments, the movement being classified as fair during the past 10 days. The price, however, has been held up by a rising crude market, mediocre refinery runs, and the failure of the jobbers to lay in supplies to carry them over the winter season.

Expect Crude Advance

Indications of a general revision in the price of crude oil were offered refiners during the past week with the changes in North and Central Texas by The Texas Co., instituting a four-grade system with prices ranging from 75 cents to $1.30. A 25-cent increase in Pennsylvania oil was taken as a forerunner of advances in other eastern fields and in the Mid-Continent. Chicago oil men are awaiting a new price list for Oklahoma and Kansas crudes.

Right now the refiners seem to be able to make their prices stick. For a long time the marketers have been able to beat them down in the face of a bad crude market and adverse conditions but the manufacturers are entering the present situation with new vigor and jobbers and marketers are gradually falling into line with them. It is agreed that a constantly increasing crude market will develop an increase in the tank wagon price structure. At present, however, the refiners are inclined to let the purchasers worry a little, in return for the long advantage they held over the refiner. They are content to get higher refinery prices with the same tank wagon figures for a short time. This condition has resulted in a narrower margin for new contracts, and has brought many jobbers to the refiners' offices recently. The future looks good to the refiner under present conditions.

Future Looks Bright

A better movement of the higher gravity gasolines' developed during the past week. This was the result of the higher prices for New Navy and the approach of frosty weather, which many jobbers believe marks the end of the motoring season. A weather forecast, however, points to an open Christmas, with a possibility of little snow or bad weather until January.

With many refiners sold up on New Navy over December and some quoting prices for January shipments, it is definitely expected that the present situation will continue good or get better. A reversal of the price structure is scoffed universally at the present time. Some Pennsylvania refiners and marketers are buying New Navy out of Group 3 at 7 cents. The Chicago refiners have been shopping some among themselves for 6½-cent gasoline, some with big orders, and they have found none available from that source. It is thought that the 6¾-cent gasoline in the hands of the brokers has been cleaned up also. The refiners are keeping cleaned up on all motor fuels. The 64-66 375 grade is still experiencing a good export demand with the result that the other high gravity stuff is given a sympathetic movement. Jobbers are grabbing much of this for domestic consumption also, especially northwest of Chicago.

The scarcity of naphtha and the bullish tendency of the entire list forced this product to a higher level during the past week. Likewise the 56-58 450 gasoline was helped, some dealers buying it in preference to New Navy and giving it the proper "kick" with absorption gasoline, which has been very cheap.

As a result of the activity in gasolines during the past few days blends are getting more of a demand. The 60-62 450 end point grade seems to be preferred with the others getting considerable attention also. Blends have been scarce and the movement slow, but it is anticipated that the approach of a cold snap will put new life into them. Inquiries are numerous.

Natural Gasolines Weaker

Natural gasolines continued to fall, with some sales for Grade A reported below 5 cents. The conditions in these cases were exceptional, however, most of the stuff finding buyers at 5¼ to 5½ cents. Grade C fell below 5 cents, a large part of the sales being made at 4¾ cents. There has been little demand until recently, due to the low price of New Navy and the warm weather doing away with the necessity for "sweetening" motor fuel for winter use.

Kerosene has done well to hold its own position with the aid of belated orders for export shipment. The domestic demand has been disappointing to many refiners who had hoped for much larger interest from domestic oil burners. Reports of 5-cent kerosene in Kansas and North Texas have been received but have done little to aid the Group 3 condition, which continued to rock along with a price of 4½ cents. Most sales were made near this figure during the past week. The movement has been fairly decent as a result of the export demand.

There was little 24-26 fuel oil moving out of Group 3 to the trade under a price of 75 cents. The strength has been apparent on all sides with the increased purchasing on the part of the railroads traversing Oklahoma. The fact that Oklahoma refineries are not making much fuel oil and that the railroads are showing a significant interest in it in fact of an increase in the price of crude has contributed largely to the enthusiasm in this product. El Dorado and Smackover grades were helped with the better condition attending Group 3 fuels.

Straw distillate failed to show any signs of life. The open winter and the failure of the burner users to take up the large supplies allotted them has contributed largely to the distress in dis-

(Continued on Page 118)

AMERICAN
DYEWOOD COMPANY

Approved by Underwriters Laboratories, Inc.

A Superior New Foam Stabilizer for Extinguishing Fires

FOR many years there has been a demand for an improved stabilizer for use in foam fire extinguishing apparatus. **Amdyco,** developed by us in co-operation with several of the larger oil companies, supplies the answer to this demand.

Exhaustive tests under the most exacting conditions have conclusively proved the superiority of this product on the following points:

1. **Amdyco** goes into solution more readily than any similar product now available.

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3. The foam blanket produced by **Amdyco** is of a greater pers stency than that of any other stabilizer on the market.

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Already several of the largest manufacturers of portable and hand extinguishers have adopted **Amdyco.** It is proving its worth through actual usage.

Most important, **Amdyco** is of such character that no special apparatus is necessary. Any standard foam installation will do. Organizations now equipped with foam fire fighting apparatus will appreciate this adaptability of the new product.—Where it is desired, we shall be glad to recommend competent foam installation engineers.

We are, at the present time, prepared for immediate shipments to any part of the country. Specify **Amdyco**—it's the cheapest, the best, the most easily bought fire insurance ever offered.

AMDYCO may be had in barrels, drums or tank cars.

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Main Office: 100 East 42nd Street, New York City
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That you may have
A MERRY CHRISTMAS
and a
HAPPY NEW YEAR
is the sincere wish
of the
entire Taxman organization.

We are closing this old year happy in the thought that we have made new friends, and that new customers have learned the value of Taxman "Service Without a Premium."

It shall continue to be our aim during 1924 to serve our customers so that they may profit on their contracts with us.

TAXMAN REFINING COMPANY
Sales Agents
New York Life Bldg. Kansas City
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UNEXPECTED GASOLINE CONSUMPTION CHECKS CONCESSIONS IN THE EAST

By N. O. Fanning

NEW YORK, Dec. 17.—Considerable optimism has developed in the eastern refined oil markets. The advances made in Pennsylvania and Gulf Coast crude have led the trade to believe the situation has turned the corner and that improved prices will soon be in order for the principal products of crude as well.

There have been no upward movements of importance yet, and gasoline is being freely offered but price concessions are not so numerous as they have been. One factor which has caused a better situation in gasoline than expected is that consumption in the eastern States has held up beyond all expectations. The reduction in gasoline stocks during the fall has been greater than anticipated.

At the same time the sharp reduction in the production of the Powell and southern California fields has already made a big hole in the prospective supply of good gasoline-yielding crudes. With all indications pointing to record consumption of gasoline, refiners may have to avail themselves of every possible means of increasing the yield from the crudes available.

It is difficult to see how gasoline prices can stay at their present levels much longer. Although stocks on hand are larger than in any previous year at this time, the demand promises to eat into them very quickly. Those who have been talking of such a big oversupply have been comparing stocks with previous years rather than comparing stocks with the demand and their relationship in other years. What has really occurred has been a general growth in the demand for oil products which has brought about the necessity of increased production and stocks. Therefore the change for the better in the gasoline situation, as well as the situation as regards other products, may be more rapid than many anticipate.

Small Factors Hold Out

Many of the smaller independent refiners who have been offering gasoline at recessions in the Atlantic Seaboard territory now seem to be holding back somewhat due to expectations of higher prices. This in itself will probably serve to accelerate an upward movement once it starts.

A. C. Bedford, in his address before the American Petroleum Institute, said gasoline prices are too low. He reflects the belief of the entire oil industry, without doubt. The time is believed to have passed when, in the event of an advance in the gasoline tank wagon market, any State official or any other person can secure supplies of "distress" gasoline and offer them at ruinous prices.

However, despite prospects of improvement in prices, there is no disposition to overdo it, inasmuch as this would only bring about further agitation. Only an unheard of scarcity of crude oil, it is believed, would bring back the prices which existed at the close of 1920.

Lubricants Improve

The lubricating oil market is showing some improvement. Consumption holds up fairly well, especially the motor trade. On the other hand, the chief sources of crude for lubricating oil manufacturers are the fields where advances in prices have already taken place, and it may be lubricants will be the first to advance among the refined oil products.

Bunker Oil Firm

Indications that an advance in the price of bunker fuel oil will take place soon are contained in news that Panuco crude oil, one of the chief sources of the product which is marketed on the Atlantic Seaboard, has advanced in price. The increasing scarcity of other crudes has brought about sharper competition for crude in the Panuco crude, so that it now commands from 65 cents to 70 cents per barrel at Tampico. This is only a small amount below the price of light Mexican crude, which is quoted at around 80 cents.

Oil Receipts Gain

Another significant factor in the eastern refined oil markets is the probability of a maintenance of a comparatively high rate of production throughout the winter in expectations of a record demand for oil in 1924. It is yet too early to say just how well production will hold up, but receipts of oil at Atlantic ports for the week ended December 14, averaging 595,000 barrels daily, a high record, indicate continuance of a good volume of business. Receipts from Gulf Coast ports were especially large, averaging 245,000 barrels daily.

The following table shows estimated daily average receipts of crude and refined oil by water at the principal Atlantic Coast ports for the last two weeks, and for the months of November and October, 1923 (in barrels):

	Week Ended		Month	
	Dec. 14	Dec. 7	Nov.	Oct.
New York	200,000	223,000	215,000	230,000
Philadelphia	186,000	95,000	95,000	100,000
Baltimore	91,000	13,000	28,000	41,000
Boston	29,000	45,000	24,000	26,000
Fall River	16,000	11,000	9,000	18,000
Providence	4,000	24,000	13,000	17,000
Norfolk	11,000	11,000	12,000	9,000
Charleston	32,000	.....	11,000	11,000
Miscellaneous	26,000	21,000	29,000	31,000
Total daily average	595,000	443,000	436,000	493,000

Receipts at the port of Baltimore, averaging 91,000 barrels daily during the week ended December 14, established a high record. Total receipts for the week were 640,000 barrels, of which the largest part came from the Pacific Coast.

RAPID PROGRESS OF NEW HEWITT OUTLET

ARDMORE, Okla., Dec. 17.—Work is progressing rapidly on the pipe line which the Oklahoma Pipe Line Co. is laying from the Hewitt Field to De Queen, Ark. The pipe is now being laid across the Santa Fe tracks, about one-half of a mile south of the Rose Hill cemetery. The brush gang is 17 miles east of Ardmore, the right of way gang has reached a point about 7 miles east of this city, and the ditchers are now coming through the Westheimer-Daube ranch, several miles out of Ardmore.

Steel work on the buildings being erected at the Hewitt station has practically been completed and the brick work is partially done. Gravity lines are now being laid from producing properties to the station.

NOVEMBER MOTOR RECORD

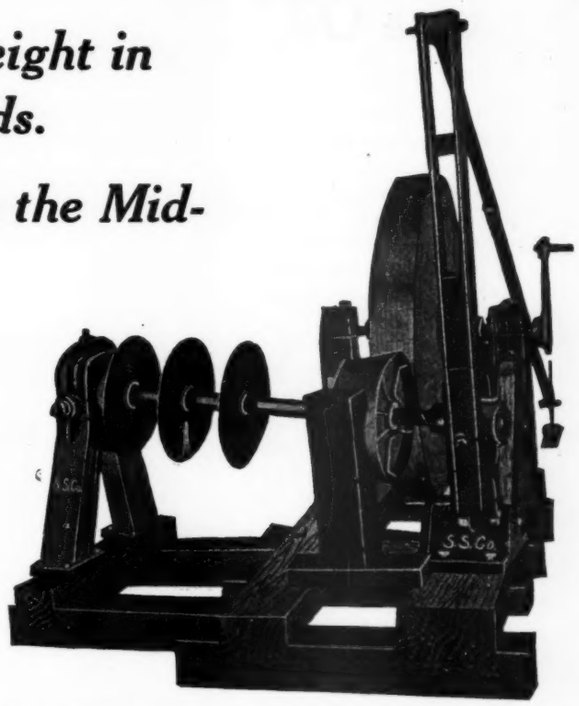
Production of 4,000,000 automobiles in the United States this year—a gain of 50 per cent over the 1922 record—was indicated by directors of the National Automobile Chamber of Commerce, who announced that the output for 11 months had been brought to 3,717,709 cars. Production in November totaled 325,125 cars and trucks. The month's peak of the year's output was reached in May, when 393,409 cars were manufactured.

Your Rig Is Not Complete Without The SHAFFER ALMETAL SAND REEL SUPPORT

One hundred thirty-eight in South American fields.

Over five hundred in the Mid-Continent Field.

Adopted as standard equipment by many large producing companies.



Manufactured under Pontius and West Patent and Pontius Patent Pending

FEATURES: Constructed of high grade metal throughout. Easy to assemble and take down. All parts readily accessible for adjustments. Interchangeable with any type of Sand Reel Shaft. Can be installed without changing standard equipment. Employs chain-oiled babbitted bearings. Prolongs life of Band Wheels, Sand Reels and Sand Lines. Can be moved from one well to another. Cuts the cost of operating.

Weight, complete, 1256 pounds.

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THE SHAFFER SPECIALTY COMPANY

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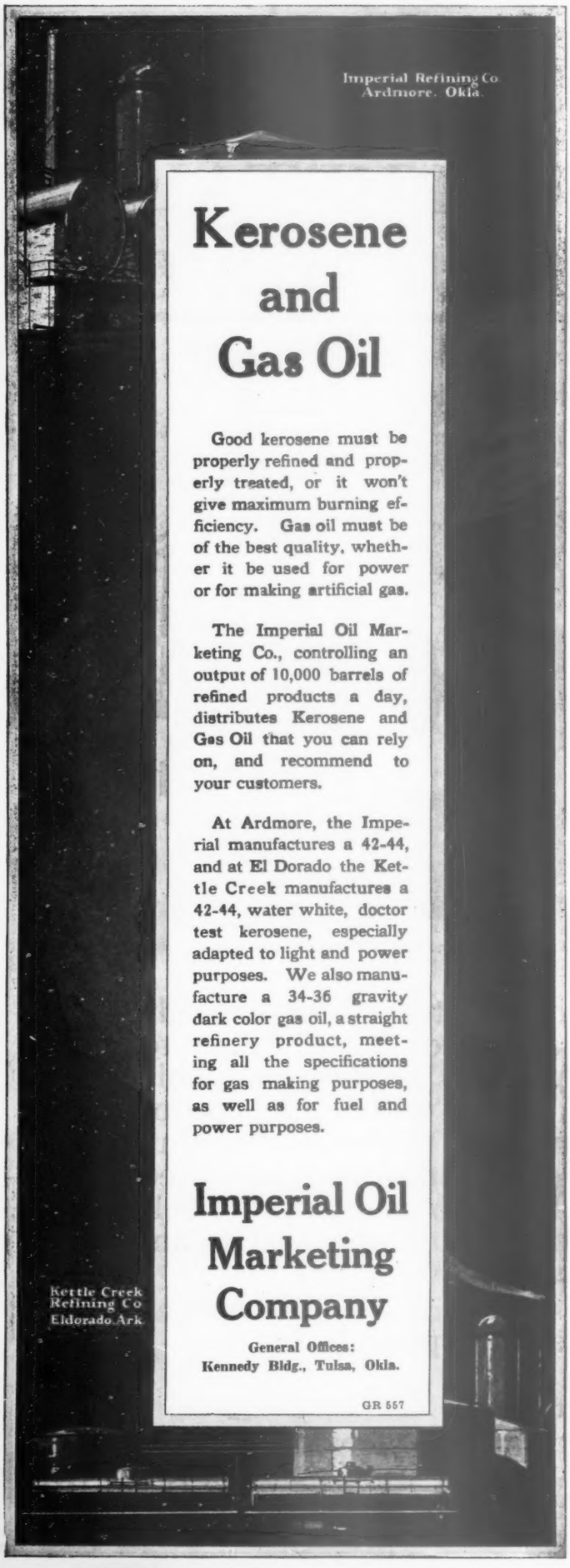

Imperial Refining Co
Ardmore, Okla.
Kerosene and Gas Oil
Good kerosene must be properly refined and properly treated, or it won't give maximum burning efficiency. Gas oil must be of the best quality, whether it be used for power or for making artificial gas.
The Imperial Oil Marketing Co., controlling an output of 10,000 barrels of refined products a day, distributes Kerosene and Gas Oil that you can rely on, and recommend to your customers.
At Ardmore, the Imperial manufactures a 42-44, and at El Dorado the Kettle Creek manufactures a 42-44, water white, doctor test kerosene, especially adapted to light and power purposes. We also manufacture a 34-36 gravity dark color gas oil, a straight refinery product, meeting all the specifications for gas making purposes, as well as for fuel and power purposes.
Imperial Oil Marketing Company
General Offices:
Kennedy Bldg., Tulsa, Okla.
GR 557
Kettle Creek Refining Co
Eldorado Ark.

NORTH CENTRAL TEXAS

(Continued from Page 48)

State Oil & Refining Co.'s No. 11 Carter, 57 bbls. at 1,575 feet.

Drilling—The Texas Co.'s No. 10 Carter Bros. is drilling in shale at 95 feet; Barkley and others' No. 2 Wilson, tested a sand that showed salt water and may abandon at 2,500 feet; Bohler and others' No. 1 Wilson, drilling at 155 feet; Boyd and others' No. 1 Mrs. Carter, at 1,485 feet; Bridwell and others' No. 1 Wilson, at 805 feet; Chenault and others' No. 5-C Wilson, at 155 feet; No. 6-B Wilson, shut down for power on top of an oil sand at 1,584 feet; No. 7-D Wilson, rigging to pump and test a sand showing some oil at 1,592 feet; Clayton and others' No. 2 Richards, cemented casing and shut down at 1,362 feet; Dale and others' No. 7 Wilmot has 1,000 feet of oil in the hole from a sand at 1,595 feet; Dilday and others' No. 1 Ferguson, drilling at 2,165 feet; Dorain and others' No. 1 Wilson, at 1,325 feet; Featherstone and others' No. 7-C Wilson, drilling in shale at 1,385 feet; Ferguson and others' No. 1 Jackson, drilling in soft rock at 1,745 feet; Gatewood and others' No. 1 Boone, fishing job at 2,130 feet; Gould and others' No. 2 White, drilling in brown shale at 405 feet; Hardeyeste and others' No. 1 Parrish, has 350 feet of oil in the hole from a sand at 1,606 feet and will drill deeper. Hudspeth and others' No. 2 Ambercrombie, drilling at 155 feet; Johnson and others' No. 1 Wilson, testing an oil sand at 1,597 feet; No. 2 Wilson, drilling at 505 feet; Kentucky Oil Corp.'s No. 1 Wilson, drilling in mud at 1,195 feet; Lynch and others' No. 1 Bridwell, water trouble at 1,321 feet; Maer and others' No. 1 Wilson, standardizing on top of an oil sand at 1,592 feet; No. 7 Mrs. Carter, drilling in brown shale at 1,355 feet; Morris and others' No. 1 Wilson, putting on jack sand showing oil at 1,601 feet; Moore and others' No. 1 Wilson, shut down for 6⅝-inch casing on top of a sand showing oil at 1,593 feet; Norton and others' No. 1 O'Donnell, shut down to make repairs to rig at 1,275 feet; Pace and others' No. 1 Ford, drilling in blue shale at 1,305 feet; Payne and others' No. 1 Parrish, drilling at 1,505 feet; Riner and others' No. 1 Wilson, block 29, at 355 feet; No. 2 Wilson, drilling in hard rock at 1,575 feet; R. M. F. Oil Co.'s No. 1 Wilson, drilling at 705 feet; Sampley's No. 1 Miller, drilling at 1,155 feet; Shamrock Oil Co.'s No. 1-B Richardson, spudding at 155 feet; Sixty-Six Oil Co.'s No. 6-B Wilson, drilling at 1,105 feet; Thomas and others' No. 1 Ford, drilling at 1,575 feet; Sun Oil Co.'s No. 3 Farmer, underreaming 8¼-inch casing at 1,190 feet, total depth 1,250 feet; Sunshine State O. & R. Co.'s No. 12 Carter Bros., setting 6⅝-inch casing at 1,565 feet; No. 13 Carter Bros., drilling in rock at 1,560 feet; No. 2 Parrish, drilling in brown shale at 1,105 feet; Underwood Drilling Co.'s No. 3 Wilmot, drilling at 555 feet; No. 1 Wilson, drilling in blue shale at 1,410 feet; Dr. Wallace's No. 16 K. & K., repairing a pump and will drill deeper at 1,742 feet; Wall-Duke Oil Co.'s No. 1 Garvin, spudding.

Young County Drilling

Drilling — Byrnes and others' No. 1 Mahoney, running 5⅞-inch casing at 3,933 feet; Narrown and others' No. 1 Vick, straightening a crooked hole, total depth 180 feet; Logan and others' No. 1 Wild, drilling in rock at 565 feet; McGuire and others' No. 1 Carter, fishing for casing at 1,875 feet; McKenzie and others' No. 1 Logan, drilling at 605 feet; Mann and others' No. 5 Whittenburg, drilling in soft rock at 955 feet; Mid-Kansas Oil & Gas Co.'s No. 1 Moren, fishing for casing at 1,860 feet; Nash and others' No. 1-B Withers, shut down for casing at 2,300 feet. North American Refining Co.'s No. 1-B Scott, drilling at 3,100 feet; Richardson and others' No. 1 Wilburn, spudding; Robinson's No. 1 Grubbs, drilling at 2,900 feet; Seaboard Oil & Gas Co.'s No. 4 Hughes, spudding; Shamrock Oil Co.'s No. 3-A Bower, drilling in blue shale at 1,675 feet; Snowden and others' No. 1 Carter, underreaming 8¼-inch casing at 1,860 feet; Whitehead and others' No. 1 Graham, fishing for tools at 875 feet; No. 1 Johnson, running 6⅝-inch casing and cleaning out, total depth 4,229 feet.

Stephens County

Completions—Critten and others' No. 1 Cobb, 175 bbls. at 3,290 feet; Equity Petroleum Co.'s No. 10 Childs, 150 bbls. at 3,235 feet; Prairie Oil & Gas Co.'s No. 1-B Brown, dry at 3,330 feet; Walker and Caldwell's No. 14 Walker and Caldwell, 50 bbls. at 3,310 feet.

Drilling—Mid-Kansas Oil & Gas Co.'s No. 2 Couger, running 6-inch casing at 3,250 feet; Corts and others' No. 1 Corts, fishing for casing at 3,920 feet; Curry Pool Oil Co.'s No. 1 Compton, drilling at 305 feet; Graham and others' No. 1 Saunders, drilling in brown shale at 1,105 feet; Haile and Knight's No. 1-B Jones, spudding; Magnolia Petroleum Co.'s No. 4 Brown, drilling at 3,415 feet; No. 12 Rush, drilling in lime at 3,175 feet; No. 4 Walker, running 5-inch casing at 3,015 feet; Mahlstedt & Mook Oil Co.'s No. 1 Walker Caldwell, 3,000 feet of oil in the hole from the top of the gray lime and showing some water at 3,170 feet; Weekley Petroleum Co.'s No. 2 Martin, shut down for orders with 2,500 feet of oil in the hole at 4,000 feet; Pierce and others' No. 1-B Brown, drilling at 1,555 feet; Whaley and others' No. 1 Bradford, drilling in shale at 1,300 feet; Rosser & Pendleton's No. 5 Jones, drilling at 2,015 feet; Scott and others' No. 2 Davis, at 550 feet; Sinclair Oil Co.'s No. 5 Pemberton, at 1,705 feet; T. & P. Coal & Oil Co.'s No. 3 Ashmore, drilling and showing some gas at 2,113 feet; No. 1 Lee, drilling at 1,745 feet.

Eastland

Completions—Harrell and others' No. 1 Mahan, dry at 3,000 feet; Magnolia Petroleum Co.'s No. 14 Westmoreland, 7 bbls. at 2,860 feet; Panhandle Refining Co.'s No. 5 Webb, 65 bbls. at 1,185 feet.

Drilling—Ablon and others' No. 1 Collins, cleaning out after a shot with no results at 3,310 feet; Clayton and others' No. 1 Steele, set 6⅝-inch casing and will drill deeper at 3,050 feet; Donnelly Drilling Co.'s No. 1 Brelsford, drilling at 190 feet; Eby and others' No. 5 Miller, at 3,515 feet; Humble Oil & Refining Co.'s No. 4 Merrill, fishing at 1,205 feet; Knox-Lewis Oil Co.'s No. 2 Ellison, drilling in brown shale at 1,000 feet; Magnolia Petroleum Co.'s No. 4 Ross, drilling at 775 feet; Ocheltree's No. 1 Webb, drilling in rock at 405 feet; Panhandle Refining Co.'s No. 7 Hightower, fishing at 835 feet; Rosenfield and others' No. 1 Gilbert, shut down on top of a sand showing some oil at 485 feet. Root and others' No. 4 Boner, drilling in gray lime at 3,235 feet; Clayton and others' No. 1 Harwood, drilling at 2,200 feet; No. 1 Rio Bravo, setting 8¼-inch casing at 2,200 feet; Dougherty and others' No. 1 Johnson, setting 10-inch casing at 1,600 feet; Mahew and others' No. 1 Luse, drilling up junk at 2,000 feet; Root and others' No. 1 Walker, pulling casing to shoot in the Caddo lime at 3,550 feet; Stovar and others' No. 1 Ray, cleaning out at 2,050 feet; Texas Development Co.'s No. 1 Lewis, drilling in blue shale at 2,145 feet; Prairie Oil & Gas Co.'s No. 3-A Brooks, rigging up to drill in and complete at 2,250 feet.

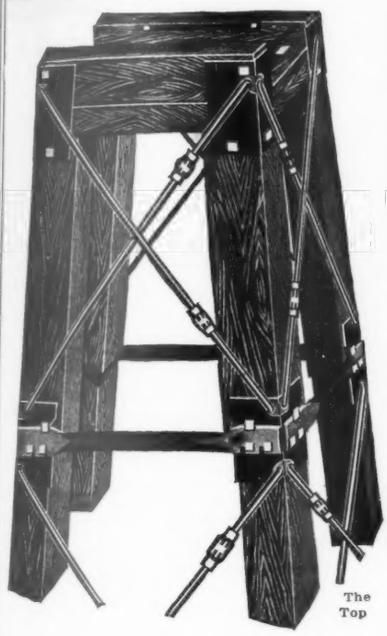
Wildcats

Baylor County: Drilling—Waggoner and others' No. 1 Portwood, drilling at 1,730 feet.

Clay County: Completions—Lone Star Gas Co.'s No. 7 Edrington, dry at 2,235 feet; Ross and others' No. 1 Stine, 1,000,000 feet of gas at 1,620 feet.

Drilling—Crude Oil Production Co.'s No. 1 Kinder, drilling in soft rock at 1,015 feet; Gulf Production Co.'s No. 1-A Boddy, fishing for 4 joints of 6⅝-inch casing at 2,790 feet; No. 3 Worsham, drilling at 555 feet; Lone Star Gas Co.'s No. 9 Skelly, drilling at 1,090 feet; No. 7 Panhandle, drilling in mud at 1,865 feet; Nebraska Oil & Gas Co.'s No. 1 Myers, drilling by a bit collar at 3,265 feet; Moore and others' No. 1 Hull, drilling in blue shale at 1,255 feet.

Cooke County: Drilling—Red River



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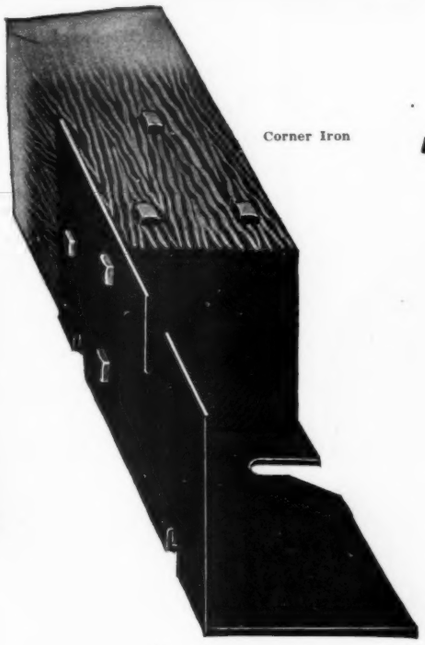
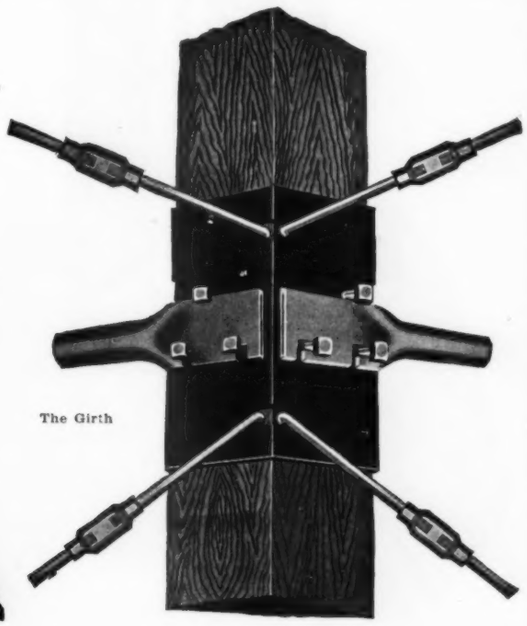
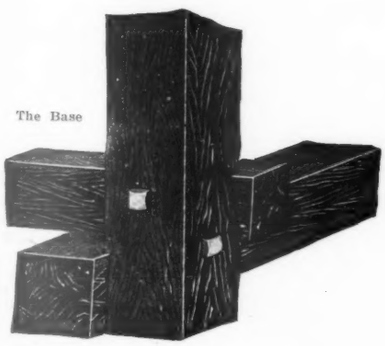


Corner Iron

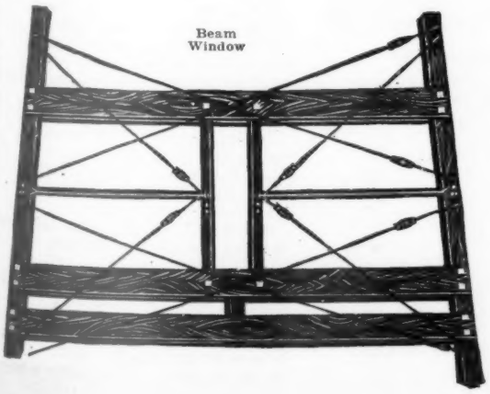


The Girth

NATIONAL TURNBUCKLE DERRICK MOST ECONOMICAL



The Base



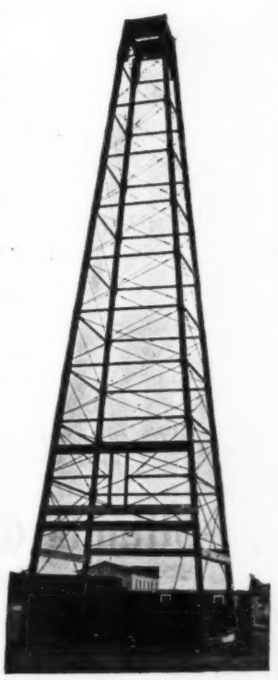
Beam Window

Our patented National Turnbuckle Derrick is pronounced by leading oil producers the most economical derrick obtainable, due to the ease and rapidity with which it is erected, its longer life, and great strength, the fact that it can be instantly tightened up, should any part work loose, the fact that it can be moved at minimum cost, and its 100% salvage value if properly cared for.

CANNOT TWIST. Twisting, a common weakness in turnbuckle derricks, is prevented by our patented construction. Turnbuckles hook into slots in extreme outer corners, drawing the braces across the full faces of the legs.

STRONGEST. The National is the strongest derrick made. Legs are 8x8 yellow pine. Top legs are 12x12. Girths are constructed of powerful 3″ steel tubing. Corner Irons are of ¼″ Boiler Plate. Braces are 1″ and ⅞″ steel rods.

Standard size is 22-foot base, 82 feet high, but can be furnished in any standard height for rotary or cable tool drilling or pumping. Satisfaction guaranteed. Ask for literature.



NATIONAL TURNBUCKLE DERRICK CO.

413 Wright Bldg. **Tulsa, Oklahoma**

Affiliated Companies:

Osage Rig, Reel and Lumber Association **Mahan, McCarthy & Besse, Contract Rig Builders**

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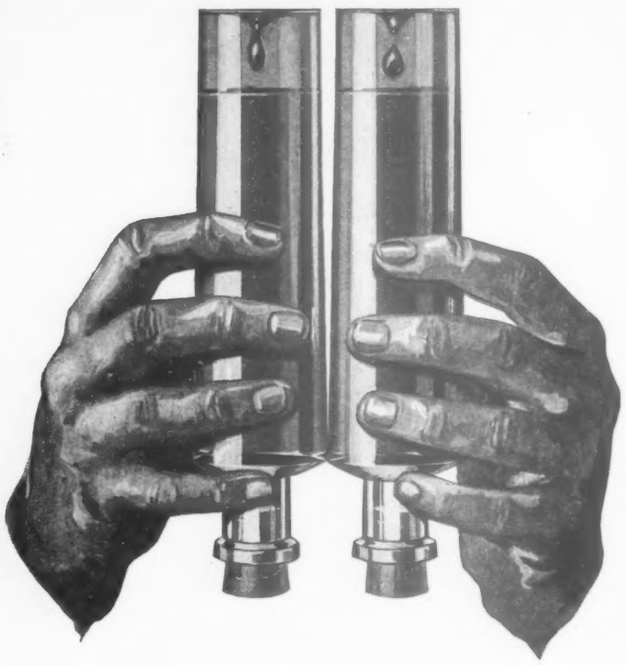

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WHEN samples are sent out in clear flint glass Sample Oil Bottles with ground and polished bottoms they are more than merely "offered for sale."

They are given a distinct advantage in the preliminary and comparative color and viscosity tests. Available in the 2-oz., 4-oz. and 8-oz. sizes direct from stock. Please specify whether you desire plain or ground and polished bottoms.

We are also able to supply you from our own Cork Factory with extra-long, high grade, tapered corks to fit your bottles.

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Chicago, Ill.	Kansas City, Mo.	New Orleans, La.	San Francisco, Calif.
Cincinnati, Ohio	Los Angeles, Calif.	New York, N. Y.	Seattle, Wash.
		Philadelphia, Pa.	

Drilling Co.'s No. 1 Jones, cleaning out at 1,275 feet.

Jack County: Drilling—Duncan and others' No. 1 Woodward, fishing job at 1,305 feet.

Montague County: Completions—The Texas Co.'s No. 1-A Gist, 35,000,000 feet of dry gas at 850 feet.

Drillingg—Amerada Oil Corp.'s No. 1-A Beasley, fishing at 3,030 feet; Gulf Production Co.'s No. 1 Benton, casing trouble at 2,840 feet; Mascho Oil Co.'s No. 1 Howard, setting 6⅝-inch casing at 2,130 feet; Texon Oil Co.'s No. 1-A Crenshaw, drilling in rock at 2,230 feet.

Armstrong County: Drilling—Magnolia Petroleum Co.'s No. 1 J. A. Ranch, running 6⅝-inch casing at 3,220 feet.

Carson County: Drilling—The Texas Co.'s No. 3 Burnett, drilling in gyp at 460 feet; Gulf Production Co.'s No. 3-A Burnett, fishing for pipe at 3,140 feet; Humphreys Oil Co.'s No. 1 Sandford, fishing for tools at 2,530 feet; Silk and others' No. 3 Burnett, drilling in red beds at 1,200 feet.

Dallam County: Drilling—Kellerman and others' No. 1 Jones, drilling by junk at 1,640 feet.

Gray County: Drilling—Holmes and others' No. 1 Morris, underreaming 12½-inch casing at 900 feet.

Hemphill County: Drilling — Piney Oil Co.'s No. 1 Hopkins, drilling in lime shells and shale at 2,805 feet.

Hutchinson County

Hutchinson County: Drilling—Coline Oil Co.'s No. 1 Sandford, drilling by tools at 3,219 feet; Humphreys Oil Co.'s No. 1 Johnson, drilling by a bit at 2,585 feet; Montgomery and others' No. 1 Johnson, running 10-inch casing at 1,760 feet; McGee and others' No. 1 Smith Capers, cleaning out at 3,175 feet; Producers & Refiners Corp.'s No. 1-B Bivens, drilling at 1,100 feet.

Potter County: Drilling — Producers & Refiners Corp.'s No. 2 Masterson, drilling in black rock at 2,915 feet; No. 1-A Bivens, drilling in red beds at 2,285 feet; No. 2-A Bivens, drilling at 1,175 feet.

Wheeler County: Drilling — Tyrell and others' No. 1 Sheldon, drilling in red beds at 1,100 feet.

Palo Pinto County: Completions—Thomas and others' No. 1 Thomas, 1,000,000 feet of gas at 3,590 feet.

Drilling—Hess and others' No. 1 Cropper, drilling at 740 feet; Jones and others' No. 1 Jones, drilling in rock at 1,785 feet; Nelson and others' No. 2 Finch, cleaning out at 4,150 feet; Simms Oil Co.'s No. 1 Costello, drilling in black rock at 3,520 feet; Zada Bell Oil Co.'s No. 1 Weldon, drilling at 3,190 feet; T. & P. Coal & Oil Co.'s No. 1 Robinson, drilling by tools at 3,580 feet.

Shackelford County: Drilling—Connelly and others' No. 1 Parrish, drilling at 525 feet; Humble Oil & Refining Co.'s No. 1 Elliott, running 8-inch casing at 1,993 feet; No. 1 Jackson, drilling in rock at 2,900 feet; No. 1-E Poindexter, drilling at 1,835 feet; Landreth Oil Co.'s No. 2 Lynch, fishing for casing at 3,388 feet; No. 14 Poindexter, underreaming 8-inch casing at 2,300 feet; Texhoma Oil & Refining Co.'s No. 2 Blach, drilling in blue shale at 2,650 feet.

Brown County: Completions—Matheson's No. 1 Smith, dry at 700 feet; Scott and others' No. 1 Chambers, dry at 2,900 feet.

PRODUCTION REPORT

Week Ending December 13, 1923

Burkburnett	
American Refining Co.	245
Barkley & Meadows	1,800
Humble Oil & Ref. Co.	690
Gulf Production Co.	1,840
Magnolia Petroleum Co.	3,700
Middle States Oil Co.	210
McMahon Oil Co.	360
Panhandle Refining Co.	450
Sinclair Oil & Gas Co.	55
The Texas Co.	650
Texhoma Oil & Ref. Co.	610
Miscellaneous	11,335
Total	21,945
Electra	
Empire Gas & Fuel Co.	1,595
Humble Oil & Ref. Co.	120
Griswold Oil Co.	460
Gulf Production Co.	980
Magnolia Petroleum Co.	5,020
Middle States Oil Co.	120
McMahon Oil Co.	215
The Texas Co.	5,255
Texhoma Oil & Ref. Co.	2,520
Miscellaneous	4,425
Total	20,710
Iowa Park, Etc.	
American Refining Co.	40
Griswold Oil Co.	35
Gulf Production Co.	60
Texhoma Oil & Ref. Co.	40
Miscellaneous	1,865
Archer County—	
American Refining Co.	290
Griswold Oil Co.	435
Gulf Production Co.	575
Humble Oil & Ref. Co.	120
The Texas Co.	930
Texhoma Oil & Ref. Co.	1,870
Miscellaneous	14,065
Petrolia—	
Gulf Production Co.	85
Magnolia Petroleum Co.	55
The Texas Co.	95
Miscellaneous	190
Total	20,880
Stephens County	
Empire Gas & Fuel Co.	120
Gulf Production Co.	1,610
Humble Oil & Ref. Co.	1,920
Magnolia Petroleum Co.	925
Mid-Kansas Oil & Gas Co.	1,840
Prairie Oil & Gas Co.	1,300
Sinclair Oil Co.	545
The Sun Co.	745
The Texas Co.	2,820
T. & P. Coal & Oil Co.	1,345
Miscellaneous	10,660
Total	23,710
Eastland County	
Gulf Production Co.	605
Humble Oil & Ref. Co.	110
Magnolia Petroleum Co.	575
Panhandle Refining Co.	500
Prairie Oil & Gas Co.	910
Sinclair Oil Co.	520
The Texas Co.	210
T. & P. Coal & Oil Co.	1,085
Miscellaneous	2,530
Total	7,045
Other Fields	
Strawn—	
T. & P. Coal & Oil Co.	410
Miscellaneous	765
Moran—	
Empire Gas & Fuel Co.	155
Humble Oil & Ref. Co.	585
The Texas Co.	160
Texhoma Oil & Ref. Co.	220
Miscellaneous	2,800
Coleman County—	
Miscellaneous	220
Brown County—	
Miscellaneous	600
Comanche-Eastland—	
Humble Oil & Ref. Co.	375
Magnolia Petroleum Co.	1,220
Mid-Kansas Oil Co.	390
Sinclair Oil & Gas Co.	75
The Texas Co.	215
T. & P. Coal & Oil Co.	235
Miscellaneous	5,310
Young County—	
Gulf Production Co.	140
North American Refining Co.	155
Sinclair Oil & Gas Co.	515
Oklahoma Petroleum & Gas Co.	65
Panhandle Refining Co.	375
The Texas Co.	140
Miscellaneous	3,460
Mitchell County	910
Reagan County	170
Jack County	30
Total	19,946
Total all fields	113,946
Total last week	117,239
Loss	3,413

P. R. R. USES MOTOR TRUCKS

The Pennsylvania Railroad has announced that between Wilmington, Del., and Philadelphia it will hereafter handle short distance packages or less than carload lots of freight by motor truck. This is a significant decision by the largest American railroad system.

THE SPIRIT OF CHRISTMAS

Christmas comes but once a year,
Bringing heaps o' joy an' cheer!
Bringing happiness an' smiles;
Blotting out the frets an' riles;
Bringing hope to hungry hearts;
Binding up the wounds an' smarts;
Filling folks with love an' peace—
Lighting homes with Christmas trees!

Loving ones, with trusting prayers,
Ask for surcease from their cares;
Others ask for gifts o' gold;
Some for warmth, instead o' cold;
Some are seeking gifts o' love,
From the Giver up above;
Strength an' courage; hope an' cheer—
Is what they are wanting here.

'Taint the GIFT, that makes for joy;
Precious jewel, or tinsel toy;
'Taint the present, rich an' fine,
Stirring your heart, friend, or mine;
It's the SPIRIT back o' it—
HOW it's GIVE—that makes a hit!
If the gift is backed by LOVE—
It comes straight from up above!

—James Edward Hungerford.

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Blowers for Cupolas, Furnaces, Smelters, Agitation of Liquids, Pneumatic Conveyors, etc.

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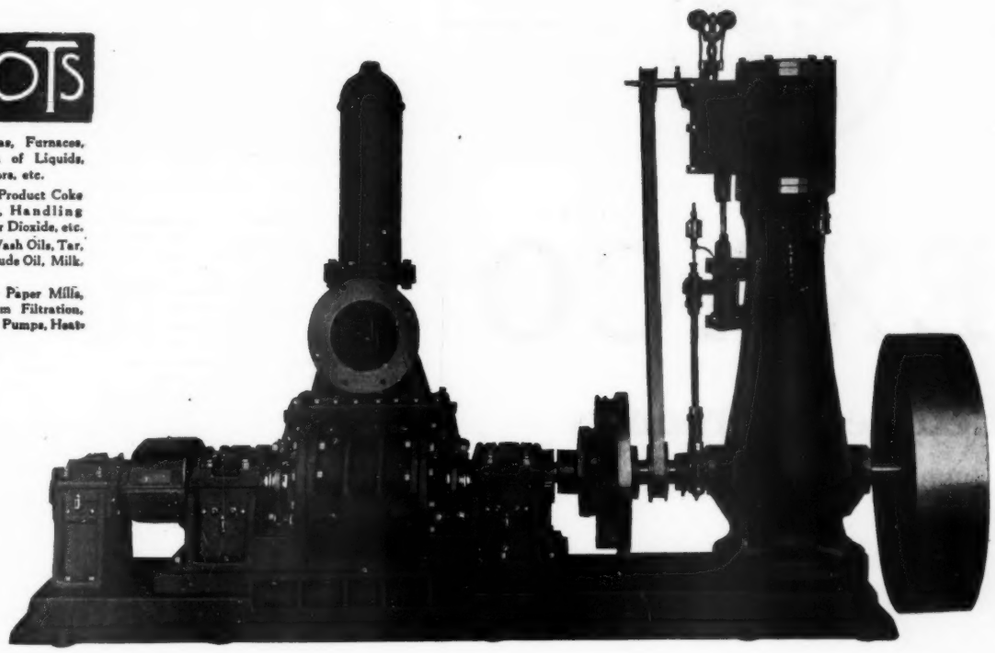

ROOTS Rotary Oil Pumps

ROOTS ROTARY OIL PUMPS will handle the lightest gasoline or heaviest crude with equal facility.

They are built in sizes ranging from .06 gallon displacement per revolution to 50,000 gallons per minute, all employing the same principles of design and construction.

Particularly adapted for handling gasoline because no internal lubrication is required. The absence of foot, suction and discharge valves, and the few parts necessary to build the complete pump all go to make ROOTS ROTARY OIL PUMPS the ideal equipment for refinery pumping operations.

Source of power may be turbine, steam engine or motor, and any of these classes of power may be direct connected, geared or belt driven, thus giving a wide choice of arrangement and allowing the pumps to be used under almost any conditions.

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Diesel Fuels	Red Oils
Signal Oils	Black Oils
Miners Oil	Floor Oils
Gas Oil	Paraffin Oils
Distillates	Wax Oil Stock
Spindle Oils	Waxes
Motor Oils	Oil Soap
Engine Oils	Asphalts
Dynamo Oils	Road Oils
Machine Oils	Asphalt Cement
Cylinder Oils	Pipe Coating
Cylinder Stocks	Roofing
Car Oils	Roofing Paper
Greases	Roofing Cement
Cup Greases	Petroleum Coke
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CANADIAN FIELDS

(Continued from Page 52)

but the test is being carried deeper for oil

In the Okotoks Field, southwest of Calgary, the official statement of Imperial Oil, Ltd., is that Royalite Oil Co.'s No. 4, Section 7-20-2w-5 is delivering gas to the compressor plant and the Canadian Western Natural Gas Co. lines. This test got a gas production estimated between 7,000,000 and 8,000,000 feet a day at 2,890 feet deep. This gas was cased off and the hole carried deeper to 3,185 feet when drilling was discontinued for the season and the well shut in. Recent reports of a "gusher" are apparently due to the fact that after the well was shut in some time, on opening the valve it blew out considerable light oil or gasoline, condensed under pressure from the wet gas; but there is apparently no actual oil production. The gas is not so high in gasoline content as that from the Dingman No. 1 well, which runs about 1½ pints to 1,000 feet. The gasoline plant, which last winter handled about 90,000,000 feet a month, is being enlarged as a result of a decision reached last spring, with a view to providing additional units to relieve the plant of the strain of continuous operation. No further drilling will be done in this area till next spring.

In Sweetgrass district, southern Alberta, the Muir-Burns Syndicate has started rigging up Jordan No. 1 on a location immediately across the boundary road south of the Moodie-Dundas test, Section 4-1-15w-4. This test is about 8 miles north of the nearest Sunburst producer. The Corlett Syndicate is going ahead with plans for a merger of companies interested in unfinished tests on the Quarantine Reserve, Township 1-15w-4. This merger will include Coutts-Sweetgrass Oils, Ltd., (McLean); Lethbridge Oils, Ltd. (Baalim) and several other companies. The Boundary Oil Co. (McCullough-Patterson) with an unfinished test on Section 3-1-15w-4, is reported making independent arrangements to complete its test. Australian capital is reported to be finincing the merger.

The Alberta Refining Co., Ltd., recently incorporated with $50,000 capitalization and head offices at Coutts, will build a small refining plant on the J. Burnett farm, directly across the Sunshine Trail from the Imperial Oil, Ltd. storage plant. A 2-still plant with about 250 bbls. capacity will represent the initial organization, which will be planned with a view to subsequent extension. The directors are: President, L. R. Olsen; first vice president, John Mars; second vice president, E. Herberg; secretary, George H. Roberts; treasurer, William Thresher. Mr. Olsen, formerly of the Kevin refinery, is largely behind the enterprise.

East Central Alberta

In east central Alberta, Imperial Oil, Ltd., Grattan No. 2, Section 14-45-8w-4, has abandoned after drilling to 1,910 feet. This test was delayed for some months at 1,864 feet owing to casing trouble, but resumed drilling a few weeks ago and was carried deep enough to test both the prospective oil and gas horizons. Neither gas nor oil in appreciable quantities was encountered. The test was located almost midway between the old Grattan well and Imperial Oil, Ltd. Grattan No. 1, both of which developed gas in larger quantities. It is possible that Imperial Oil, Ltd., may undertake another test in the Irma-Wainwright area, but no new work will be started in any event till next spring.

British Petroleums, Ltd., which developed a heavy oil production in No. 2 well, Section 30-46 6w-4, will move its head office from Vancouver, B. C. to Edmonton early in 1924, preliminary to starting further development work. British Petroleums, Ltd. No. 2 has been shut in for the winter, after removing the temporary tubing; and the drilling outfit is being dismantled. It will be moved to a location on the Edmonton Oil & Development Co. leases, for a test by that company. Plans for utilizing the production have not yet been completed; it is a heavy crude, somewhere between 12 and 16 specific gravity, with an asphaltic base.

Vancouver, B. C. capital is reported to be interesting itself in further drilling, and a Vancouver syndicate has located a new test on Township 45-8w-4, north of Imperial Oil, Ltd. Grattan No. 1 Edmonton and Calgary interests represented by J. O. Williams have filed on territory south of Baxter Lake and southeast of Wainwright, mostly in Section 44, Range 5 and 6, west of the fourth; and a test will be drilled close to Baxter Lake.

PRICE TREND UPWARD IN CHICAGO MARKET

(Continued from Page 110)

tillates. Gas oil developed with a sudden interest on the part of the gas companies and the fact that many refineries have started storing gas oil in anticipation of demands for cracking purposes next spring. Industrial demand has been good recently.

Fuel Oil Strong

The interest in fuel oil has been even more remarkable than the steady growth in the gasoline market. As one refiner said: "If crude doesn't strengthen soon, fuel oil may have to carry the load for several weeks." With Mid-Continent crude selling at $1 and fuel oil bringing 75 to 80 cents per barrel, the fuel is maintaining a very strong position.

Oklahoma lubricants have been holding up well in competition with the Gulf Coast zero cold test product. Several inquiries have been made for bright stock recently, which has held considerable interest. In the neutrals, the non-viscous grades have been weak, but the viscous products are holding up well. Steam refined lubes have been firm. Refiners think the Oklahoma lubricants are recovering due to possible large purchases soon after January 1, for the coming motoring season consumption. The good weather has enabled motorists in this section to continue the use of higher cold test oils, cutting down the demand for the Gulf Coast zero cold test lubricants somewhat. The movement over the past year has been considerably larger than it was in 1922, and it is thought that 1924 will continue to show improvement. Wax is still scarce and holds a firm position. Many refiners are sold up over a long period.

The American Petroleum Institute meetings at St. Louis during the week were largely attended by Chicago refiners, brokers and jobbers, who report a settled feeling of optimism as a result of the sessions. Many think that the present upward movement can be hurried to the extent that it will not hold but will suffer a severe setback, if the advancement is too sudden. They predict prosperity in 1924 but believe in conservatism at present. Others feel that the start for prosperity has been made already, due to the remarkable decreases in crude oil production reported during the past month. They feel that the situation will stand a severe price stiffening and they are working with that theory in view. Regardless of opinion, oil men in this part of the country are enjoying the present optimistic trend.

STINNES, JR., GOES HOME

Hugo Stinnes, Jr., son of the German industrial leader, who has been visiting the United States, inspecting oil fields, cotton mills and steel mills in the interests of his father, sailed for home on the White Star liner Majestic. Mr. Stinnes firmly declined to comment on the business he had negotiated for his father or speak of any future deals.

HELPFUL

The Oil and Gas Journal Classified Wants Section is the premier of all oil publication classified sections.

It has been elevated to its high position of respect by the men of the industry because of its reliable and helpful service to them.

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A Joyous Christmas Season

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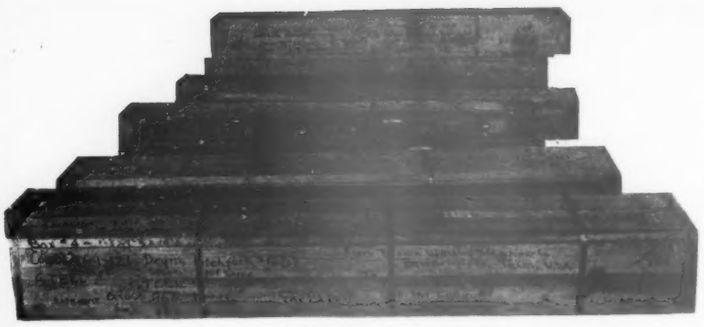

Devil's Steel Hands and Devil's Pitchforks packed for export shipment to India, Roumania, Venezuela and Mexico

23 Orders for Foreign Oil Fields Last Month

During the past month we have made 23 shipments of our DEVIL'S STEEL HAND and DEVIL'S PITCHFORK to points in India, Roumania, Venezuela and Mexico.

There is a reason for the popularity of these tools in foreign fields and it can be told in a very few words. Time after time they have gone in and completed within a few hours, fishing jobs where other tools had failed and a great deal of time and money had been spent.

All that we ask, to prove to you the worth of either the DEVIL'S STEEL HAND or the DEVIL'S PITCHFORK, is that you give them a trial.

Both our export and domestic departments are ready at all times to give you sudden service with fishing tools that are **swift** and **sure.**

We make fishing tools for pumping wells and also special tools for odd fishing jobs.

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DOWNWARD TREND OF LIGHTER OILS

(Continued from Page 102)

heavier products are just beginning to be developed as they ought to be. Furnace oil is only one phase of the development of uses for heavy crudes. Engines are being developed with a view to the use of heavier crudes instead of gasoline. The consumption of bunker fuel oil also promises to show further big gains in 1924.

Oil Industry Grows

That these rapid changes, now in progress and anticipated, will cause further "growing pains" in the oil business is entirely possible. It is the oil refiners' problem to meet these changes and still maintain prices for oil products which the consumer feels are just.

The following table shows prices of heavy and light Mexican crude, together with prices of certain grades of refined oil, now, on January 1, 1923, and on April 1, 1922:

	Present	Jan. 1, 1923	Apr. 1, 1922
Mexican crude at Tampico:			
Light, per bbl.....	$ .80	$1.35	$ .70
Heavy, per bbl.....	.65	.90	.55
Lubricants:			
600 steam ref., gal...	.21½	.21½	.22½
Kerosene, tankwagon, gal.	.15	.15	.14
Bunker oil, N. Y., bbl.	1.35	1.45	1.10
Gasoline, twgn., gal.	.15	.22	.24

Comparing present prices with those of January 1, 1923, reveals that light Mexican crude has fallen from $1.35 to 80 cents per barrel; gasoline has fallen from 22 cents per gallon, tank wagon basis at New York, to 15 cents.

As against these sharp declines, (600) steam refined lubricating oil remains unchanged. Kerosene is also unchanged, while bunker fuel oil has dropped only 10 cents per barrel.

A comparison of present prices and those of approximately two years ago shows almost the same situation, except that light Mexican crude, which was in such heavy supply in the early part of 1922, was lower than it is at present.

Public Demand

Although the foregoing changes in prices are doubtless based largely on physical changes in the oil business, the fact that the public has demanded lower gasoline prices must be taken into consideration. Lower gasoline prices, especially during 1923, have made it necessary for refiners to get more for the heavier products, especially kerosene and lubricating oils. Although further physical changes may tend to restore the conditions existing in 1920, 1921 and 1922, the oil industry may still find it advisable to keep the price of gasoline down below the 1920 peak prices.

WARNS INSTITUTE TO TELL STORY OF OIL

(Continued from Page 46)

and it is a fairy story, of a barrel of petroleum; tell them what you mean by production, that means pumping it out of the ground. Do you men realize that you sell a gallon of gasoline today for 3 cents a pound? That is what the steel maker gets for a pound of steel. Is anybody going to argue whether a pound of gasoline is more or less valuable than a pound of steel? The fellow thinks he knows something about a pound of steel because we have talked about it, have talked about the wonderful steel industry, and they have not talked about the petroleum industry in exactly the same way.

It is a fairy tale—this story of a barrel of petroleum. Does he know what fuel oil means? Does he know how you get lubricating oil? Does he know about paraffin? He knows about Nujol because you advertised that.

Does he know anything about lubricating oil? Not a thing! You may tell him that lubricating oil has got to be nice and clear so you can see through it, and at every convention I have ever attended where petroleum products are shown, they always tell you about the color test. I have a little query that I want to ask you. I was born and raised on a farm and the only way we lubricated the spindles of our wagon was with lard, and that was white. I worked for several years to clean a spindle of a wagon or a buggy so clean that I could grease it with white lard and drive to the little village two a half miles away and back and take the wheel off and still have the lard white. God! that worried me. I wanted to ask you gentlemen who are experts in lubricating oil this: I will wash a motor out as clearly and completely as it is possible to do with gasoline or benzol or anything else, so that I can dump that gasoline in there and turn the motor over and it will run out water white, and I will put the finest Nujol that you can make into that motor and drive it 25 miles and draw it out and it will be black. When did it cease to be a good lubricating oil on account of the color test?

The petroleum industry needs to tell the public the story of petroleum in an honest, frank way, and instead of people criticizing they are going to marvel at your accomplishment because, by God, you have accomplished something that is worth the handclap of every American motorist in the world. You have done a thing that has done more for this country than perhaps any other thing in the world. We have 14,000,000 motor vehicles on the road today, enough to transport the entire population in one and one-half trips and you couldn't do that if it wasn't for petroleum.

You need to tell the people of America. The people know what a steering wheel is, they know what a transmission is, but they don't know what petroleum is and they don't know what petroleum products are. They need to be told in a way they will understand.

Filling Station Pamphlets

You gentlemen have not the slightest reason to stand up and accept the criticism the American public is giving your industry and you won't have to accept it if you will go out and tell the story.

Every great organization is trying to tell its story. The American Bell Telephone today is trying to tell its story. They kept silent for a great many years and people began to criticize them and they came out, not saying that they are perfectly righteous people because we can keep that to ourselves, but you can begin to tell them the story of petroleum.

You can hand them out a little pamphlet at the filling stations, and, gentlemen, I am telling you that as a user of an automobile I am perfectly frank in saying to you if I knew the story of a gallon of petroleum or a barrel of petroleum as you men know it I would feel that I was doing myself a favor when I paid you an increase in the price of gasoline.

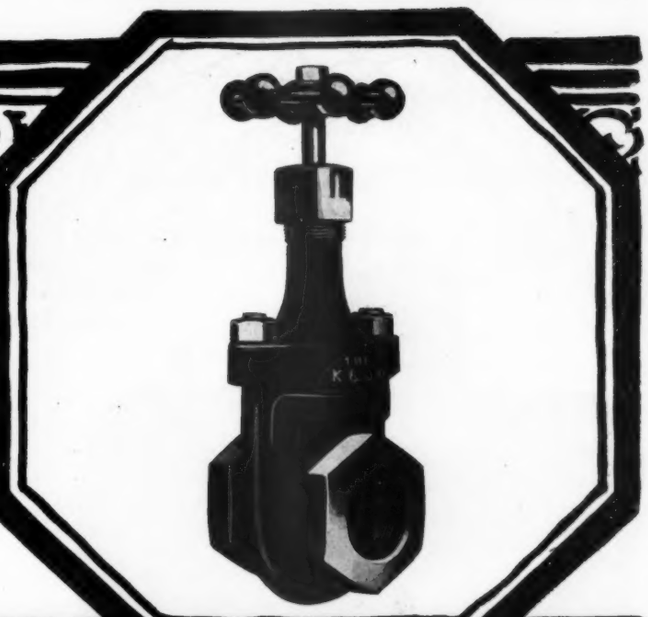
There is perhaps no product in the world today that transmits the economic value from one position to another as does a gallon of gasoline, yet the people today take that as a matter of course. They don't recognize it.

There are three great factors that have made the automobile industry and people don't know them: rubber, alloy steel, and gasoline. They are the great factors that have made the automotive industry. The rubber industry has tried to tell its story in advertising tires. The steel industry has told its story. The automotive fellows have told their story, but you gentlemen have kept silent. You can't continue it.

DAMON MOUND COMPLETION

HOUSTON, Tex., Dec. 17.—The Sinclair Oil & Gas Co.'s No. 20 Jackson at Damon Mound was completed at 3,[illegible] feet and came in making 700 bbls. 35 gravity oil. It is the best completion in that pool in many months.

Coupe and others abandoned No. 1 Scheunmann in Guadalupe County, southwest of the Luling Field, and made a location for No. 2. The United North & South Oil Co.'s No. 1 Shanklin, also in Guadalupe County, shows water.



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Into every KELLY & JONES SADDLE GATE VALVE is built that rugged strength and durability which insures permanence and a lasting satisfactory service.

Thousands of these valves are on the job continuously—giving that kind of service that stands out forcibly when subjected to unusual strain or treatment,—including leading jobbers everywhere to handle them as standard equipment.

This valve and others are described in our latest catalogue. You will be interested in reading it. It is sent free upon request—write for your copy.

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FARRAR & TREFTS
Steam Boilers
1863 - 1924

For 60 years a leader in the boiler industry.

That is the record behind FARRAR & TREFTS Steam Boilers, and needless to say, we are proud of it.

It has been predicted that 1924 will be a banner year especially in the oil industry, and as such, it will be a fine year for us, for the service and quality of FARRAR & TREFTS Steam Boilers is noted wherever the oil industry has been carried.

So we have occasion to rejoice and we wish you an exceedingly MERRY CHRISTMAS and a HAPPY and PROSPEROUS NEW YEAR.

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100

CALIFORNIA FIELDS

(Continued from Page 40)

Santa Fe Springs during December will be over 200,000 bbls. at the most.

An analysis of the field production at the present time reveals the fact that the decline is fully two months ahead of the estimates made during September. Long Beach, on the other hand, while it did not attain the maximum daily production during October and November estimated by Mr. Jensen, will probably be very close to the estimate made for December.

Completions Reported

There were several wells put on production at Santa Fe Springs during the week but most of them were comparatively small. The Petroleum Midway Co.'s well No. 6 on Mattern lease No. 2 was the largest well brought in, and as a result of its completion the company increased its production 1,950 bbls. a day. It was drilled to 4,632 feet and finished with a 4¾-inch oil string landed at 4,629 feet. The oil from this well, which tests 32.9 degrees and shows a cut of one-half of 1 per cent, is flowing through a 1½-inch bean under a pressure of 175 pounds. The Shell Oil Co. completed No. 5 Slusher, one of its many drilling wells on this lease and the new addition to its producers came in flowing 1,600 bbls daily. No. 5 Slusher was finished at 4,675 feet and the oil, testing 34.2 degrees and showing a cut of 1½ per cent, is flowing through a 1-inch bean under a pressure of 425 pounds. In addition to this well, the company finished its No. 10 Golay at 4,646 feet and brought in a 950-bbl. well producing 33.8 gravity oil, which showed a cut of 1½ per cent.

The Union Oil Co. put two small wells on production, one of them a new one and the other a recompletion. No. 5 Alexander, the company's new well, was completed at 4,700 feet and brought in producing 295 bbls. a day. The quality of this oil, as well as the quantity, was disappointing inasmuch as the production, testing 32.3 degrees, showed a cut of 10 per cent. The company had a little better luck with No. 14 Bell, a recompletion, after being redrilled and deepened from 4,069 feet to 4,700 feet. This well was returned to production flowing 975 bbls. a day of clean 34.6 gravity oil.

The Ambassador Oil Co. and the Wilshire Oil Co. each completed new wells and, although there was only 15 feet difference in the completion depths, there was quite a variation in the production, due to the location of each on the structure. The Ambassador's No. 5 Baker was finished at 4,590 feet and came in flowing 700 bbls. a day of 33.6 gravity oil, while the Wilshire Oil Co.'s No. 1 Baker was completed at 4,575 feet and put on production doing 90 bbls. a day.

The General Petroleum Co. and C. C. Julian are also each credited with completions but neither was successful in securing production. The former company finished cleaning out its No. 8 Santa Fe, but the well was making considerable water and will probably require additional work before being listed as a final completion. C. C. Julian finished his No. 11, a new well, at 4,602 feet, but when it was put on production and only made 200 bbls. it was killed in order that it may be cleaned out and deepened. The Standard Oil Co.'s No. 1 Houghton has entered the doubtful column after passing the 5,025-foot mark and the well begins to look as if it will be a duster. The formation at the present time is a sandy brown shale and, since the well has not shown any encouragement to date, the prospect of securing commercial production is not very favorable.

Huntington Beach

The largest completion recorded at Huntington Beach was No. 1 Thompson of the Standard Oil Co., which showed an initial output of 355 bbls. a day. This well was a recompletion after being redrilled and deepened from 3,511 feet to 3,655 feet and, although the quality of the oil is not quite so good as that produced from the 3,500-foot level, the quantity produced more than offsets this slight difference in gravity. The oil from this well, which is flowing through a ½-inch bean under a pressure of 100 pounds, shows a cut of 1 per cent. The Julian Petroleum Corp. and the Globe Petroleum Corp. are also listed as having completed wells, both being put on the beach. The former company's well No. 3, located on property purchased from the Texas Co. several months ago, is pumping 270 bbls. of 22.1 gravity oil from 4,467 feet, while the Globe's No. 1 Bolsa is pumping 25 bbls. of 20.1 gravity oil from 4,361 feet.

The Petroleum Midway Co. brought in two new wells and recompleted another after redrilling and deepening it, all three being pumpers. The company's two new wells were No. 3 Savage and well No. 3 on Columbia lease No. 1. The former well, finished at 4,800 feet, pumped 85 bbls. of 23.8 gravity oil during the first 24 hours, while No. 3 Columbia, finished at 4,570 feet, pumped 15 bbls. of 24.9 gravity oil in a test of the same duration. The company's recompletion was No. 4 Vollmer Meyers, returned to production after being deepened to 4,600 feet. The production from the former two was comparatively clean but the output from this well, No. 4 Vollmer Meyers, of 20 bbls. a day, showed a cut of a little better than 5 per cent. The Amalgamated and the Union also put pumpers on production, the former company's No. 1 Dennison, making 45 bbls. a day of 22.3 gravity oil, after being redrilled and deepened from 3,945 feet to 4,598 feet, while the Union's No. 7 Brooks, a new well, is pumping 95 bbls. a day of 25.6 gravity oil from 4,600 feet. The Petroleum Co. finally succeeded in returning No. 2 O'Donnell to production after deepening it from 4,038 feet to 4,770 feet and, while it required some little time, the output has justified the extra work. From the upper sand, the well's production had dwindled to 10 or 12 bbls. a day and upon being redrilled and deepened, the output increased to 150 bbls. The Shell Oil Co.'s No. 7 Ashton, completed last week at 4,602 feet, has been on a production test since completion, but does not give any indication of cleaning up and the final outcome is still in doubt.

SURRENDERING LEASES TO SAVE TEXAS TAXES

HOUSTON, Tex., Dec. 17.—Thousands of wildcat acreage on which leases are held by oil operators are being surrendered to save paying taxes. The tax returns are due January 1, 1924.

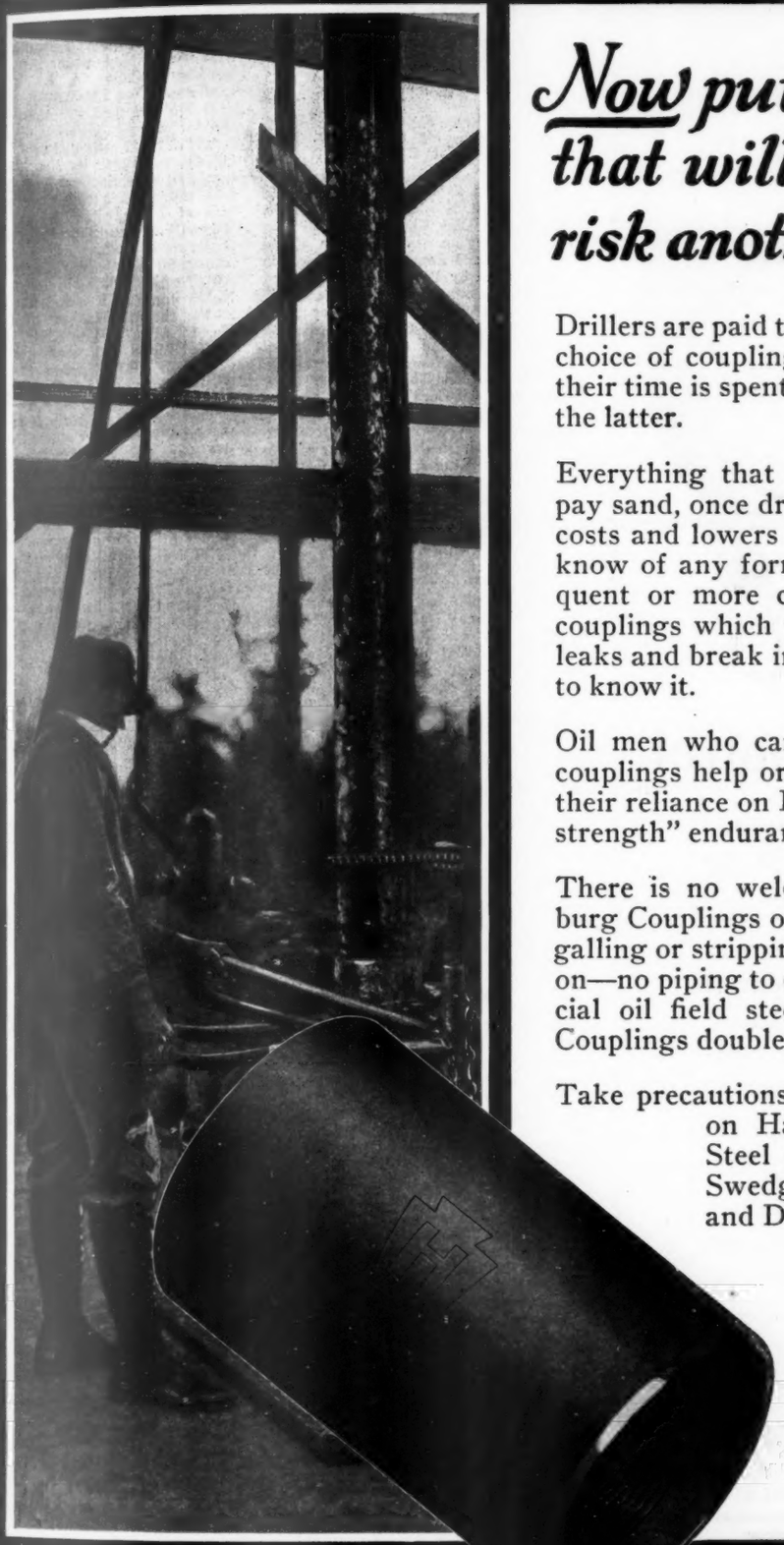
The Supreme Court of Texas in a ruling June 30 declared all oil and gas leases on land, whether productive or not, taxable just as is real estate. The decision was in the case of the Mid-Kansas Oil & Gas Co., to enjoin the officials of Stephens County from assessing or collecting taxes on any separate right or interest of that company in leases in the county.

Much of the acreage surrendered is remote from development work, having only a prospective value and it will probably be years before any work is done on or near them. In vew of these circumstances operators feel it is cheaper to return the leases to the land owners and run the risk of securing them again if developments justify it.

The law is retroactive and some county clerks have already listed the leases for taxation, especially counties where big blocks of land have been held by operators.

GILLILAND CO. ELECTION

Col. Patrick J. Hurley was re-elected president of the Gilliland Oil Co. at the directors' meeting December 17. Other officers are J. H. Maxey, vice president; D. W. Johnson, secretary and treasurer, and C. M. Christensen, assistant secretary. New directors chosen include H. H. Blumm of Dallas, Tex., and C. L. Stralem of New York City.



Now put on couplings that will hold — why risk another fishing job?

Drillers are paid to drill—not to **fish.** But your choice of couplings determines how much of their time is spent on the former or wasted on the latter.

Everything that keeps you from hitting the pay sand, once drilling is started, boosts your costs and lowers your profits. And if you know of any form of interruption more frequent or more costly than that caused by couplings which weaken, gall, strip, develop leaks and break in bucking on, we would like to know it.

Oil men who carefully consider how much couplings help or **hinder** the drill crew place their reliance on Harrisburg's "double-strength" endurance.

There is no weld—no weakness—in Harrisburg Couplings of forged seamless steel. No galling or stripping. No breaking in bucking on—no piping to develop leaks. And the special oil field steel which gives Harrisburg Couplings double strength is always uniform.

Take precautions instead of chances. Insist on Harrisburg Forged Seamless Steel Couplings, Bull Plugs, Swedged Nipples, Pump Liners, and Drill Collar Forgings.

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Forged Seamless Steel Couplings

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Gasoline Plant of the McMan Oil & Gas Co., Desdemona, Texas, equipped with a Foxboro Temperature Recorder-Controller on the Knock-Out Box.

Patented and Patent Applied for

Dependable Knock-Out Box Temperature Control

ONLY the most reliable temperature control is good enough for your knock-out boxes.

The Foxboro Temperature Recorder-Controller is the only instrument of its kind that provides positive automatic control and produces a continuous, permanent temperature record.

The record is a positive check on controller operation and furnishes definite, permanent information on conditions in the knock-out box at all times.

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6050

KANSAS FIELDS

(Continued from Page 42)

No. 1 Johnson, NE cor. SW NE, Section 33-30-14w.

A rig was on the ground for another test in Clark County, called No. 1 Peters, and to be drilled by the Watchorn Oil & Gas Co. in the C SW NW NW, Section 21-32-21w.

Boggus was fishing for casing in his No. 1 Younken, NW SE, Section 21-9-4e, at 2,560 feet, Clay County.

A new location was made in Cloud County for No. 1 Jones, NE NE, Section 7-6-4w, owned by Livingston and others.

In Chase County, the Sinclair Oil & Gas Co. was fishing for tools at 2,500 feet in its No. 1 Browning, SE cor. NE, Section 24-22-9, and the Hepworth Oil Co. was drilling its No. 1 Matti, NE cor. NW, Section 33-19-9, at 900 feet. The Security Oil Co.'s No. 1 Griffith, NE cor. Section 19-21-6, was shut down at 1,760 feet.

Stafford County also had a new location, made by King & Langston for their No. 1 Sifers, NW cor. SE, Section 21-21-11w. A rig was also on the ground for Allison and others' No. 1 Hestett, C SE SE SE, Section 34-30-1w.

In Marion County, Lampe and others were fishing for tools in their No. 1 Anderson, SW cor. NW SW, Section 2-20-3e, at 2,695 feet. Rigs were built for the National Refining Co.'s No. 12 Reamey, NW cor. NE NE, Section 20-21-4, and the Watchorn Oil & Gas Co.'s No. 35 Townsend, SW cor. SE, Section 5-22-4, and for the Kansas Oil Corp.'s No. 4 Spier, NW cor. NE, Section 8-22-4.

Another new location was made by Sharpless and others for their No. 1 Kirkerdolf, SE cor. NW SW, Section 36-17-14, Osage County. Moyer and others had a rig built and were moving in tools for their No. 1 Williams, NE cor. SW NW, Section 12-18-14. The Foster Oil Co.'s No. 1 Haufler, NE cor. SW, Section 8-16-17, was shut down at 1,520 feet.

In Rice County, Proctor and others made a location for their No. 1 Taylor, NW cor. Section 15-21-10w. Hipple & Childs were drilling at 2,525 feet in their No. 1 Jones, SE cor. NW, Section 35-20-6w.

Butler County

In Butler County, Wentworth and others were fishing for tools in their No. 1 Hazlett, SW cor. Section 12-23-7, at 2,875 feet. Faulders' No. 1 Long, NW cor. SE, Section 10-27-3, was shut down at 3,390 feet. Rigs were in place for the Yates Oil & Gas Co.'s No. 5, SE cor. NE SE, Section 36-27-5; Elwell and others' No. 2 Cameron, CSL NE NE, Section 27-28-5; and for Morgan and others' No. 1 Everston, NW cor. SW, Section 17-28-7. Tools were moved in for Jack Robinson's No. 1, NE cor. Section 30-29-3. Neiman and others were underreaming the casing at 3,145 feet in their No. Nolan, NW cor. NE NW, Section 30-28-6, and were carrying a hole full of water.

A duster, a couple of small gassers and two locations comprised the activities of Elk County. Mitchell and others completed their No. 1 Denton, NE cor. SW, Section 31-29-9, calling it dry at 2,963 feet. The same interests completed No. 1 Perkins, CWL SW SE, Section 33-29-9, as a gas well, and it made 1,500,000 feet of gas from sand at 1,508-18 feet. Webster and others also got a small gasser in their No. 1 Speer, CNL NE NE, Section 17-29-12, making about 1,500,000 feet from sand at 1,801-12 feet. The locations were for the Southwestern Gas Co.'s No. 1 Sherman, NW cor. SE, Section 20-30-11, and for the Connell Oil Co.'s No. 1 Thompson, NE cor. SW NE, Section 8-29-9.

Laskey & Rhodes were trying to shut off the water in their No. 1 Fleak, SW cor. NW, Section 21-30-11, at 1,257 feet. A rig was built for Vandeventer and others' No. 2 Thompson, SW cor. Section 26-29-9, and tools were being moved in for Deitrichs and others' No. 1 Thompson, SE cor. Section 21-30-9. A machine was on the ground for the Southwestern Gas Co.'s No. 1 Bamford, SE cor. NW, Section 36-30-11, and Deitrichs and others were spudding their No. 1 Harrod, C NE NW, Section 34-29-9.

Greenwood County

In Greenwood County, the Magnolia Petroleum Co.'s No. 1 Witty was a gasser good for 2,000,000 feet at a depth of 1,094 feet and was shut down waiting for orders. It is located in the NE cor. NW SE, Section 29-26-9. The Theis Oil Co. completed its No. 7 Souder, NE cor. SE SW, Section 3-23-13, at 1,832 feet and it was dry after topping the lime at 1,782 feet.

Locations made during the week in Greenwood County were as follows: Thompson-Olson's No. 1 Dallard, NE cor. SW, Section 13-26-11; R. G. Gillespie's No. 8 Jones, NE cor. SW, Section 21-23-13; the Mid-Kansas Oil & Gas Co.'s No. 15 Allen, SW cor. NE, Section 22-23-10; Weiss and others' No. 3 Mather, CSL NE NW, Section 31-22-10; and C. W. Titus' No. 1 Prather, NW cor. Section 29-22-10.

Two wells were shut down on top of the sand, Kreer and others' No. 1 Pixlee, SW cor. SE SW, Section 5-22-10, at 2,265 feet, and Sharpless and others' No. 3 Pixlee, SE cor. SW SW, same section, at 2,290 feet. Franklins' No. 13 Dalton, SW cor. SE SE, Section 11-24-12, was shut down on top of the lime at 1,750 feet. McGinnis and others were drilling at 2,370 feet in their No. 1 Teeter, NE cor. SE, Section 18-25-9, and the Orlando Oil Co. was below 4,183 feet in its No. 1 Breitkrantz, SW cor. NE SW, Section 4-24-10.

In Greenwood County, Bason and others shot their No. 1 Agard, CNW SE NW, Section 14-24-9, with 90 quarts in sand at 2,134-69 feet and it made 250 bbls. In the same section, Miller, Herderson and others were spudding their No. 1 Brotton, SW cor. NW NE, same McGinnis, Goble and others were doing the same thing with their No. 1 Brotton, SW cor. NE NW. Rogers and others' No. 1 Brotton, SW cor. NW SE, same section, was drilling at 800 feet.

In Cowley County, the Reiter Oil Corp. was spudding No. 6 McFadden, CSL SW SE, Section 25-32-4. The Buffalo Trust shot its No. 4 Keithley, SW cor. NW NE, Section 36-32-4, with 20 quarts and it was making 15 bbls. of oil and 50 bbls. of water from sand at 1,493-98 feet after the shot. Trees Bros. and Clark treated their No. 1 Brown, NE cor. SW, Section 6-32-5, to a 20-quart shot in sand at 2,332-51 feet, and it was good for 30 bbls. C. W. Titus' No. 3 Eastman, NE cor. SE NE, Section 7-31-6, was a 4,500,000-foot gasser in sand at 2,743-60 feet.

Elwell S & S went through a sand from 2,750 to 2,758 feet and ran into shale. The well was shut down at 2,764 feet, still in the shale, waiting for orders. The Gypsy Oil Co.'s No. 2 Joslyn, CSL SW SW, Section 11-30-4e, was drilling below 2,600 feet. Martin and others were running the 6-inch casing in their No. 1 Eastman, SW cor. Section 5-31-16, at 2,100 feet. Boggs Bros. were preparing to deepen their No. 1 Dinger, NE cor. NW, Section 25-32-4, which has been shut down with a hole full of water at 2,410 feet.

Trees Bros. and others located No. 1 Smith, SE cor. NE NW, Section 6-32-5. Paul Trees also located No. 2 Mahannah, NW cor. Lot 20, Section 6-30-8. The Arkansas Valley Gas Co. was rigging up a machine for its No. 1 Taylor, NE cor. NW, Section 17-31-5. The Watchorn Oil & Gas Co.'s No. 1 Keithley, NW cor. NE NE, Section 36-32-4, was shut down at 2,400 feet, and Torrance and others' No. 2 Seaman, SE cor. SW NW, Section 25-32-4, was shut down at 1,500 feet with a hole full of water. Tom Slick's No. 6 Olson, NW cor. SE SE, Section 1-35-7, was drilling at 3,005 feet.

NOT EXPENSIVE

Just think—$2.80 will pay for sending a four-line advertisement all around the world, **four times**. A four-line Classified Advertisement usually consists of 24 words and you know a great deal can be told in a few words. Mail your advertisement to the Classified Section now so that you will get it in next Thursday's issue.

CHAMPION

A Forging Achievement That Removes Limitations For You!

Drop forging limitations are gradually vanishing as one difficult forging problem after another is solved. No longer need your product lack the tough, give and take strength of forged steel in its most vital part.

The specifications of this connecting rod forging, forged for famous Cooper gas engines, evidences engineering and forging skill equal to forging difficult parts:

Width: 4½ inches.
Length: 63½ inches.
Weight: 275 pounds.
Completely forged 10-inch opening on one end.
Completely forged 9-inch opening on the other end.

Select a vital part of your product, regardless of the difficulties it may involve in forging. Call in a Champion engineer, as did the C. & G. Cooper Co.—an experienced man and you may be on the road to a better product and better business. Through common sense engineering ability and seasoned forging skill it's quite possible that your problem will be met through the organization's many experiences.

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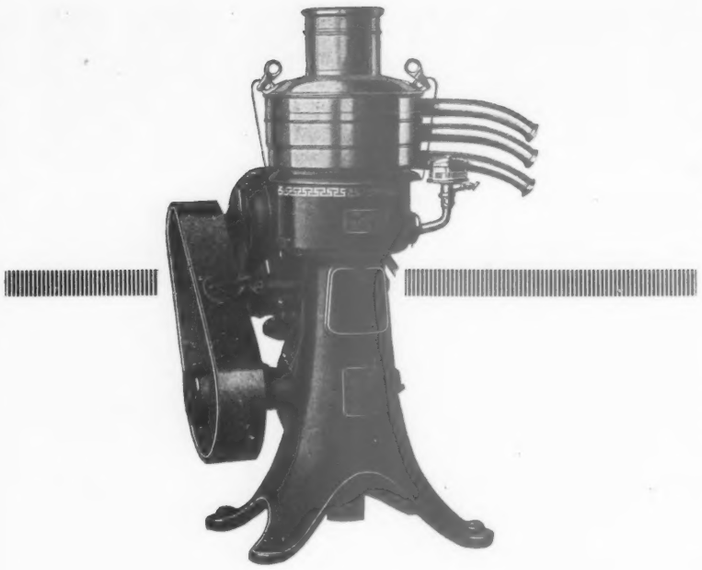
DROP FORGINGS



De Laval purified lubricating oil keeps Diesels running better and at lower cost

In an oil pipe line pumping station in the Southwest, where four vertical oil engines are installed, there had been an average of one unit down for repairs and overhauling every six weeks. A De Laval Oil Purifier was installed and the station ran along for six months without having any of its units down for overhauling. Moreover, lubricating costs were reduced from $3.35 a day to $1.00 a day and 3,000 gallons of dirty oil, which could not be reclaimed by filtration, was purified and put back into service.

In another pumping station owned by a pipe line company which has in service a total of 35 De Laval Purifiers, the following results were noted during the first month's operation of a Purifier connected with one of the units: The first day 280 gallons of oil was purified, from which 10 pounds of dirt was removed. On the sixth day only eight pounds of dirt was removed from 570 gallons of oil. On the fifteenth day only three pounds of dirt was removed from 640 gallons of oil, and on the last day of the test but one pound of dirt was removed from 720 gallons of oil. This rate is being maintained.

These two cases unmistakably show that with the oil conditioning systems previously used in Diesel-equipped plants a vast quantity of dirt is left in the lubricating system. After a little less than a month of centrifugal purification this excess dirt is removed and the Purifier then continues to remove dirt at the same rate it is introduced into the system.

Hundreds of engineers have found that few power plant auxiliaries save so much needless trouble and expense as a De Laval Oil Purifier.

Write for Bulletin No. 105 which tells just what a De Laval will do for you.

The De Laval Separator Company

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De Laval Pacific Company
61 Beale St., San Francisco, Calif.

O-357L

HAZARDS OF FINDING AND PRODUCING OIL

(Continued from Page 36)

Thus there remains a deficiency of $4,500,000,000.

This great deficit takes into consideration, only the proper, legitimate costs of searching for and producing crude oil and does not take into consideration money put into grossly inflated, illegitimate stock promotion schemes and so-called syndicates.

The oil industry is not a passing whim or fancy, but a necessary, permanent industry. This nation's commercial and political supremacy is bound up in it. It is more important than railroads, its products function on land and sea, over head and under foot, in peace and in war. Its importance would not be so great to this nation had other competing nations made petroleum so necessary a part of their existence as we have, and were likewise exhausting their reserves.

Danger to the Nation

There is a grave danger that we might be entering into a petroleum era and, as a nation, more dependent than others upon petroleum, but with depleted reserves.

The petroleum industry cannot function properly either if it is made the object of sincere but unintelligent legislation or becomes the football of the politician—nor should it be permitted, on the other hand, to treat unfairly, mislead or defraud the public. Nor permit itself to be used as the instrument for defrauding the public. No industry can grow in a healthy and permanent manner against which there is public misunderstanding and suspicion.

The oil industry lends itself to these by reason of its spectacular successes and violent fluctuations. Most of the ills to which the oil industry is heir can be avoided by educating the public—and the gravity of the situation justifies extremely plain speaking.

Proper relationship is essential because the public purchases its products and finances its operations through widely distributed stock ownership. The public therefore is the industry. Consequently, it is of as much importance to the public that this industry function efficiently as it is to us as individuals.

Needs Public Support

Under these circumstances, if the public understands the hazards and difficulties, there is little reason for the industry to expect other than fair and just treatment from the public—and the official life that represents it. Not opposition, but support, will be given to reasonable means to eliminate some of the hazards I have described, provided their existence and the importance of their elimination are realized.

Prices of products is the point at which most misunderstanding occurs. This certainly is not due to high prices charged or large profits enjoyed, for these have not existed in the industry.

It is true that in particular instances, rich returns are received, but the same is true in any lottery when the grand prize is won. There is a decided distinction between earnings and winnings. This distinction should be made so clear to the consumer of petroleum products that he will understand the outstanding results of the successful operator do not represent unreasonable profits to the industry.

The peculiarities of the business are such as to make the successes so strikingly conspicuous and the fluctuations in price so extreme, that the public is readily misled. If this condition is shown to it—if, also, it knows that the very nature of the business under existing laws compels rapid and extreme fluctuations, and is led to expect them, and that an average of the low and high prices means merely a fair price, then the public will not evidence impatience at the high prices or exhibit so much satisfaction at the low prices.

Knowledge of Costs

The public fully realizes no industry can continue sound and function permanently unless it can operate profitably. It has no objection to paying a reasonable profit, provided it is kept sufficiently informed to know that it is being charged only a reasonable profit. But it cannot be fair without being informed.

It understands if it buys gasoline 10 cents below cost now, it cannot avoid paying 10 cents above cost at some other time, provided it wishes to maintain an industry to serve it with gasoline at all. But it cannot be expected to look with unconcern upon such fluctuations unless it knows the condition which justified them—unless it knows cost.

There is no doubt but that the American Petroleum Institute would perform a very good service to the industry and to the public, if it would compile the figures showing the average cost to the industry of the products of petroleum distributed to the public.

Promoting vs. Producing

The second point of contact with the public, financing operations through stock ownership, probably calls for equal frankness. The maxim "Let the buyer beware" is no longer regarded as a good principle on which to found a business or an industry.

To a large extent the petroleum industry is becoming an instrument of stock promoting and stock gambling, as distinguished from its true function of producing oil, and to that extent its personnel is changing in type from producers of a necessary product, risking their own funds, to stock market manipulators and to confidence men, living off the credulity and ignorance of their fellow men.

Do not misunderstand me. The oil industry is becoming too vast, requiring enormous capital, to operate successfully along the old practice of partnerships and to be financed by a few individuals. Neither would I be understood as believing for a moment that the great proportion of the companies that have stood the test of time and have made honorable records for themselves, are not operated and controlled with that scrupulous nicety to the welfare of their stockholders and toward the public generally characteristic of the finest sense of honorable dealing.

But there are too many individuals, ranging from the semi-responsible leaders of concerns whose stocks are quoted on our exchanges,, down to the pure fakers of the Dr. Cook type, who are passing out to a credulous and uneducated public much that is inflated or worthless in return for hard earned frugal savings.

Uses Public Investments

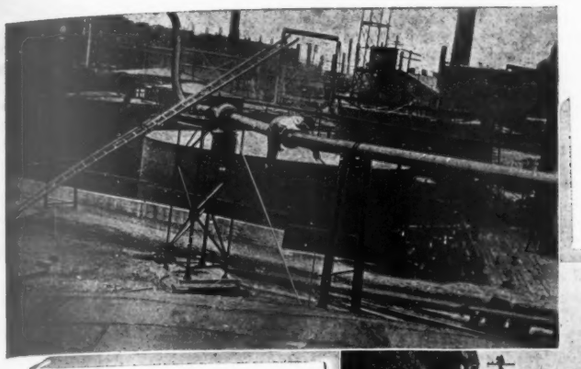
The oil industry, to a great extent, must be operated by corporations, and these corporations must have public money. But it is highly important to the oil industry that the public become educated as to values. If it is to finance the oil industry, either through buying its products or purchasing its stocks, it should be an intelligent, discriminating public. Until there is a more complete and general public understanding of the hazards of the industry, we cannot hope for a sympathetic consuming public, nor may we expect continued financial support.

It is desirable that the public have clearly the distinction between investment and speculation. As a consumer of products, it should know that spectacular individual successes do not necessarily mean high average profits for the industry. As a purchaser of oil stocks, it should know the extreme and rapid fluctuations of the oil market make even the best oil stocks speculative, and that oil stocks range from good speculations down to worthless pieces of paper, with a considerable portion of those floating around coming within the latter class.

Cooperation on Remedies

However, it is useless to discuss hazards without discussing remedies. It is a large industry, with peculiar characteristics that require it to be handled in a large way, but every effort at successful solution of the problems described means a legislative prohibition designed for the the protection of the public.

Three out of the four named hazards very directly affect the public and cannot be remedied without its sympathetic



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cooperation. I have every confidence that cooperation will be forthcoming when the public is educated to the peculiarities of the industry. This can be accomplished by constant work on the part of each of us and of such organizations as is this, maintaining a friendly spirit of helpfulness toward such understanding.

If the overproduction terminates in the early spring time, as now appears probable, and a heavy draft occurs on stocks as the summer progresses, the resulting decided advances in petroleum products prices will be received in a much more friendly attitude by the public, if it understands the true condition and the logic of such increase. Public cooperation will eliminate some of the hazards of producing oil.

REFINERS' PROBLEMS IN 1923 AND OUTLOOK

(Continued from Page 34)

above or below the current f.o.b. tank car price. This year when a surplus of gasoline accumulated in the Mid-Continent Field, the price f.o.b. the refinery, fell far below the cost of production, and placed the refiner's customers having marginal contracts in an almost intolerable position.

I doubt whether the total excess of gasoline above normal stocks, in the hands of Mid-Continent refiners have at any time this year exceeded three or four million barrels. When one takes into consideration that this quantity did not exceed 2 per cent of the total gasoline requirements for 1922, he obtains a fair index of the competitive nature of the oil business. It is one of the anomalies that if approximately 15,000,000 barrels of crude oil had been retained in pipe line and tank farm storage during the first six months, the disastrous declines in gasoline probably would not have occurred, and possibly the decline in crude would not have been so profound. Yet in view of the tremendous competition in the buying of crude oil, and in its refining, there was no power in the oil industry which could have accomplished effectively a result which would have been defensible so far as the profits of the industry were concerned.

Public Interested, Too

It is now more clearly apparent than ever that the preservation of a fair equilibrium between the supply and the demand for gasoline and for other petroleum products is equally essential to the welfare of the producer, and the refiner and of the public. It is important to the public because competition cannot long survive the tremendous financial losses involved in such a period as we have gone through.

Price Leadership

There is necessarily price leadership in every industry—sometimes by the larger and sometimes by the small interests. Some purchase crude oil from day to day on the prevailing market without contractual obligations to purchase at any future time. Other purchasers, many of them independent refiners, contract for their crude over more or less protracted periods, basing their price upon the market quotations of larger companies. During periods of transition, the independent refiner sometimes finds his market price to be one which he would not feel warranted in paying, but for his contract. His business judgment at such a time, if he were not bound by a firm contract, would influence him, either to pay a different price or to take a different quantity of crude oil.

Producers and refiners ought to give serious consideration to whether modification of contracts running over a period of months should not be made so as to leave both producers and refiners a freer hand to exercise their judgment. Where the independent refiner pays in a firm contract a price higher than warranted by the conditions, he weakens his financial ability to pay an adequate price later.

Outlook for 1924

So far as 1924 is concerned, I am unable to see any necessity for the addition of a single barrel of gasoline to existing refinery storage. The stocks of gasoline at the end of October were 22,544,30[illegible] barrels. This quantity constitutes more than a sufficient reserve for next year's consuming season; and it seems to me that practical business judgment on the part of refiners would dictate that no gasoline in excess of current sales ought to be manufactured. Otherwise, it seems reasonably apparent that next year we may repeat the disastrous experience of this year.

GREAT DEVELOPMENT IN AUTOMOTIVE INDUSTRY

(Continued from Page 34)

tition, it is important that both industries should broaden their markets to the greatest extent. Night driving should be encouraged, and made safe.

There is another field attracting attention—winter driving. North of the 40th Parallel, which runs close to St. Louis, there resides practically 75 per cent of the population, where there is to be found practically three-quarters of the automotive apparatus, and three-quarters of the gasoline is used. In this northern territory the temperature is below 50 degrees F. for six months in the year.

In this territory there could be a marked improvement in the use of motor cars, and trucks in the winter by the petroleum industry supplying more widely a winter gasoline.

Example Cited

Last year a prominent oil company marketed a winter fuel under a trade name and we were interested in noting how quickly it became popular. On February 1 we made a canvass of our shop and found that this fuel, known as A and having a gravity of 60°-62° Baume, an end point around 400° F., and a low initial and 20 per cent (20%) was used by 55 per cent (55%) of all the cars in the shop two months after it was introduced in our city.

There was no propaganda in favor of "A" fuel. The cost was 25c against 22c for "B" fuel. Some data on hand leads us to believe that had the "A" fuel not been available, the drop of percentage of cars used in winter for ever 10° F. drop of temperature below 50° F. would have been 23 instead of 15 per cent.

To sum up:

It is possible to double the miles per gallon of gasoline on cars, trucks, and in general by the practically small cost to design. In fact, when the public wants it, they can go 40 miles per gallon of gasoline on small cars.

It is possible to treble the miles per gallon on lubricating oil.

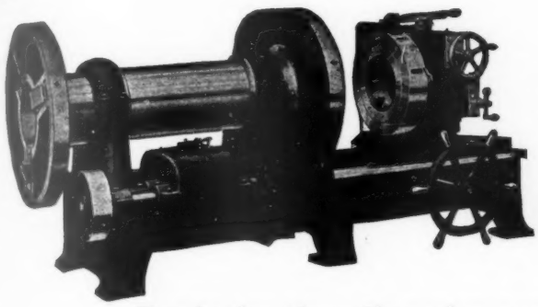
It is possible to save millions in field operation by use of modern types of automotive apparatus in place of ancient machinery.

It is possible to vastly increase the use of petroleum fuel for house heating by a study of the technical side of the question and application of these studies to heading apparatus.

It is possible to increase the sale of motor cars and gasoline by furnishing a winter grade of fuel.

UTAH PROTESTS OIL PERMIT

WASHINGTON, D. C., Dec. 15—Suit for an injunction to prevent issuance of a Federal permit to private interests to prospect for oil on a tract of 1,370,750 acres in the State of Utah was filed by the State in the District of Columbia Supreme Court against Secretary Work of the Interior Department and Commissioner Spry of the General Land Office. The State claimed that the tract, known as San Rafael Swell, belongs to the State by right of a grant made for school purposes when Utah was admitted to the Union.



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(Continued from Page 47)

Daniel F. McCarthy, Producers & Refiners Corp., Chicago, Ill.
D. F. McCarty, Parkersburg Rig & Reel Co., Tulsa, Okla.
William McComb, New York, N. Y.
John F. McCormack, American Petroleum Institute, New York, N. Y.
H. E. McCormick, Henry H. Cross Co., Chicago, Ill.
Alex McCurdy, Oil Trade Journal, New York, N. Y.
R. H. McElroy, Jr., James B. Berry's Sons Co., Chicago, Ill.
N. C. McGowen, Palmer Corp. & Louisiana Gas Co., Shreveport, La.
J. P. McFadden, Penn. Tank Car Co., Trlsa, Okla.
J. R. McGinley, Marland Oil Co., Tulsa, Okla.
Henry McGraw, Gypsy Oil Co., Tulsa, Okla.
F. F. McIntosh, Carnegie Institute of Technology, Pittsburgh, Pa.
Edward F. McIntyre, International Petroleum Exposition, Tulsa, Okla.
James McIntyre, The Oil and Gas Journal, Tulsa, Okla.
Robert McKelvy, Tide Water Oil Co., New York, N. Y.
P. P. McKirahan, Continental Tank Car Co., Tulsa, Okla.
Richard McLane, J. J. Allen & Co., New York, N. Y.
John W. McLarty, Cities Service Oil Co., Cleveland, Ohio.
A. C. McLaughlin, Associated & Pacific Oil Co., San Francisco, Cal.
Chas. McLean, Canfield Oil Co., Cleveland, Ohio.
Thos. W. McManus, Bakersfield, Cal.
Chas. Z. McNamara, Foamite Childs Corp., Utica, N. Y.
G. P. McNiff, National Tube Co., Pittsburgh, Pa.
Benjamin C. McPherson, Sun Oil Co., Philadelphia, Pa.
W. L. Mabrey, Bryte-Nelson Ref. Co., St. Louis, Mo.
R. F. McArthur, Barnsdall Oil Co., Tulsa, Okla.
A. B. Macbeth, Southern Cal. Gas Co.-Midway Gas Co., Los Angeles, Cal.
K. G. Mackenzie, The Texas Co., New York, N. Y.
Edwin Allan Macpherson, Pipe Line Construction Co., Fort Worth, Texas.
Joseph A. Maguire, The Barber Asphalt Co., Madison, Ill.
B. O. Mahaffey, Silurian Oil Co., St. Louis, Mo.
G. F. Mahan, The National Supply Co., Toledo, Ohio.
Pat Malloy, Constantin Ref. Co., Tulsa, Okla.
F. T. Manley, The Texas Co., Houston, Tex.
Van H Manning, American Petroleum Institute, New York, N. Y.
Clarence T. Mapes, Oil Well Supply Co., Pittsburgh, Pa.
L. L. Marcell, White Eagle Oil Ref. Co., Kansas City, Mo.
Charles E. Markey, Link Belt Co., Indianapolis, Ind.
C. W. Mascho, National Supply Co., Toledo, Ohio.
A. S. Matthews, Pennzoil Co., Buffalo, N. Y.
Arthur B. Lawrence, F. S. Smithers & Co., New York, N. Y.
W. W. Mattison, American Petroleum Institute, New York, N. Y.
C. B. Maubeck, Standard Oil Co. (Ind.) Wood River, Ill.
C. L. Mayhall, Imperial Ref. Co., Tulsa, Okla.
A. L. Meeks, The S. M. Jones Co., Tulsa, Okla.
W. A. Melton, Liquefied Petroleum Gas Co., Tulsa, Okla.
Herman Merker, Pressed Steel Tank Co., Chicago, Ill.
William H. Merritt, Cities Service Oil Co., St. Paul Minn.
E. A. Metcalf, The Standard Oil Co., Kansas, Neodesha, Kans.
W. F. Meyer, Power Specialty Co., Chicago, Ill.
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J. Fred Miles, Swiss Oil Corp., Lexington, Ky.
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C. Naramore, Sinclair Consolidated Oil Corp., New York City, N. Y.
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P. R. Naylor, The Continental Oil Co., Denver, Colo.
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M. L. Newhall, Sun Oil Co., Detroit, Mich.
L. V. Nicholas, National Petroleum Marketers Association, Chicago, Ill.
H. M. Nichols, Atlantic Ref. Co., Philadelphia, Pa.
G. W. Nicholson, Guarantee Liquid Measure Co., Rochester, Pa.
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Paul F. O'Brien, Oil Fields Gas Co., Shreveport, La.
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E. L. Peck, Empire Gasoline Co., Bartlesville, Okla.
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W. E. Perdew, Sinclair Refining Co., Philadelphia, Pa.
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George E. Phoenix, The Industrial Petroleum Corp., Chicago, Ill.
F. A. Pielsticker, Skelly Oil Co., El Dorado, Kan.
Q. L. Pillow, Standard Oil Co. of Louisiana, Baton Rouge, La.
W. C. Platt, National Petroleum News, Cleveland, Ohio.
George D. Pogue, Busch-Sulzer Bros. Diesel Engine Co., New York, N. Y.
Joseph E. Pogue, Consulting Engineer, New York City.
C. A. Porter, Indiana Ref. Co., Lawrenceville, Ill.
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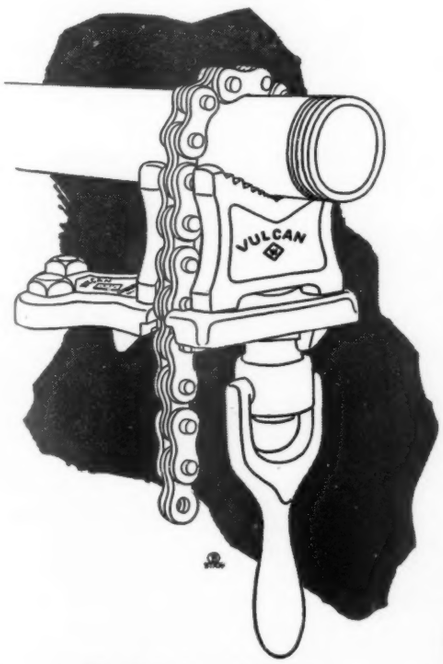

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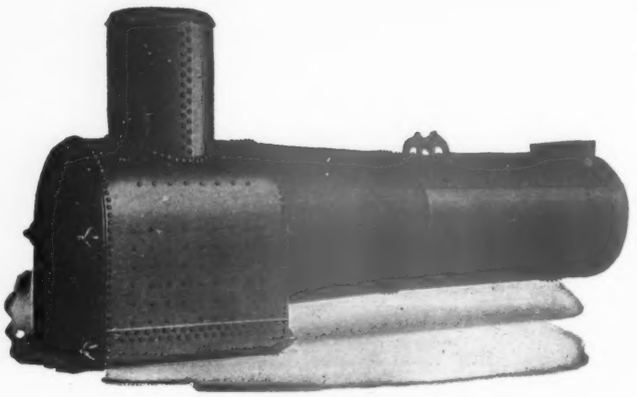

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Paul S. Reed, De Laval Separator Co., Tulsa, Okla.
Ralph J. Reed, Union Oil Co. of California, Los Angeles, Cal.
E. B. Reeser, Barnsdall Oil Corp., New York, N. Y.
John Reid, Joseph Reid Gas Engine Co., Oil City, Pa.
R. H. Remick, Tulsa, Okla.
Fred H. Rensch, Gardner Petroleum Co., Tulsa, Okla.
Marc Resek, Cleveland Metal Products Co., Cleveland, Ohio.
C. T. Ressler, Reading Iron Co., Reading, Pa.
John D. Reynolds, American Oil Men's Assn., Chicago, Ill.
C. B. Richardson, Western Exploration Co., Casper, Wyo.
L. B. Riddle, Shaffer Oil & Ref. Co., Tulsa.
Evan Rinehart, Johns-Manville, Inc., New York.
Ira Rinehart, Daily Oklahoman, Tulsa, Okla.
William A. Rockenfield, Baldwin Chain & Mfg. Co., Worcester, Mass.
W. S. S. Rogers, Jr., The Texas Co., New York.
J. H. D. Rodier, The Grasselli Chemical Co., Cleveland, Ohio.
H. W. Roe, Cosden & Co., Tulsa, Okla.
R. D. Rogers, Tidal Ref. Co., Tulsa, Okla.
P. H. Rhode, The Standard Oil Co. of Kansas, Neodesha, Kans.
John Charles Rohlfs, Standard Oil Co. of California, San Francisco, Cal.
Howard M. Rose, Cities Service Oil Co., Fort Worth, Texas.
Robert Rose, General American Tank Car Corp., Tulsa, Okla.
L. Rowland, New England Oil Ref. Co., Boston, Mass.
W. L. Russell, Worthingtotn Pump & Mach. Corp., Buffalo, N. Y.
C. J. Sadern, Standard Oil Co. of New Jersey, New York, N. Y.
E. J. Sadler, Standard Oil Co. of New Jersey, New York, N. Y.
Harry J. Saladin, Standard Oil Co. of Indiana, Chicago, Ill.
E. P. Salisbury, Carter Oil Co., New York.
W. H. Sanger, The Pure Oil Co., Columbus, Ohio.
C. C. Scharpenberg, Standard Oil Co. of California, Bakersfield, Cal.
E. H. Schippers, Roxana Petroleum Corp., Wood River, Ill.
W. A. Schlueter, C. J. Tagliabue Mfg. Co., Tulsa, Okla.
E. S. Schmidt, California Oil World, Los Angeles, Cal.
David L. Schofield, British Mannesmann Tube Co., Ltd., Dallas, Tex.
Julius Schwekel, Walworth Mfg. Co., Kewanee, Ill.
J. P. Scranton, Houston, Tex.
Austin C. Sears, National City Bank of St. Louis, St. Louis, Mo.
C. L. Seideman, Imperial Ref. Co., Tulsa, Okla.
E. G. Senbert, Standard Oil Co. (Ind.) Chicago, Ill.
J. H. Senior, West India Oil Co., New York, N. Y.
John H. Sennett, Jones & Laughlin Steel Corp., Pittsburgh, Pa.
M. R. Shaffer, Empire Gas & Fuel Co., Bartlesville, Okla.
R. M. Shanklin, Crew Levick Co., Philadelphia, Pa.
J. P. Shannon, Snowden & McSweeney Co., New York, N. Y.
R. S. Shannon, Continental Oil Producing Co., Denver, Colo.
R. W. Shape, General American Tank Car Corp., Tulsa, Okla.
B. J. Shaw, Panhandle Ref. Co., Wichita Falls, Tex.
Harry F. Shears, Shears & Riddle Co., Wheeling, W. Va.
F. E. Sheehan, The Texas Co., St. Louis, Mo.
C. G. Sheffield, Standard Oil Co., N. J., New York, N. Y.
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H. L. Shoemaker, Standard Oil Co. of N. J., New York, N. Y.
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E. C. Sicardi, Union Tank Car Co., New York, N. Y.
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M. Taxman, Taxman Ref. Co., Kansas City, Mo.
Phil H. Taxman, Taxman Ref. Co., Chicago, Ill.
Ben Taylor, Peden Iron & Steel Co., Houston, Tex.
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James A. Veasey, Carter Oil Co., Tulsa, Okla.
C. H. Verschoyle, Rock Island Refinery & Globe Drilling Co., Duncan, Okla.
Paul Wagner, National Petroleum News, Houston, Tex.
A. E. Walker, Republic Iron & Steel Co., Youngstown, Ohio.
George B. Walker, Henry L. Doherty & Co., New York, N. Y.
J. C. Walker, Morrison Bros., Dubuque, Iowa.
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J. A. Watterson, Standard Oil Co. of Ohio, Cleveland, Ohio.
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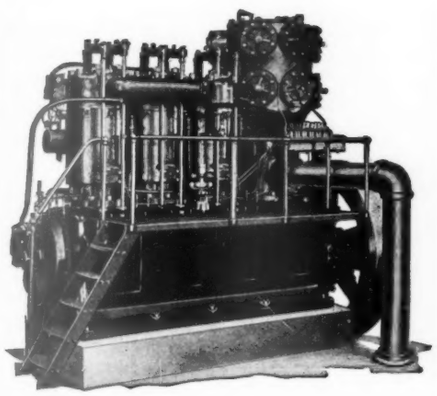

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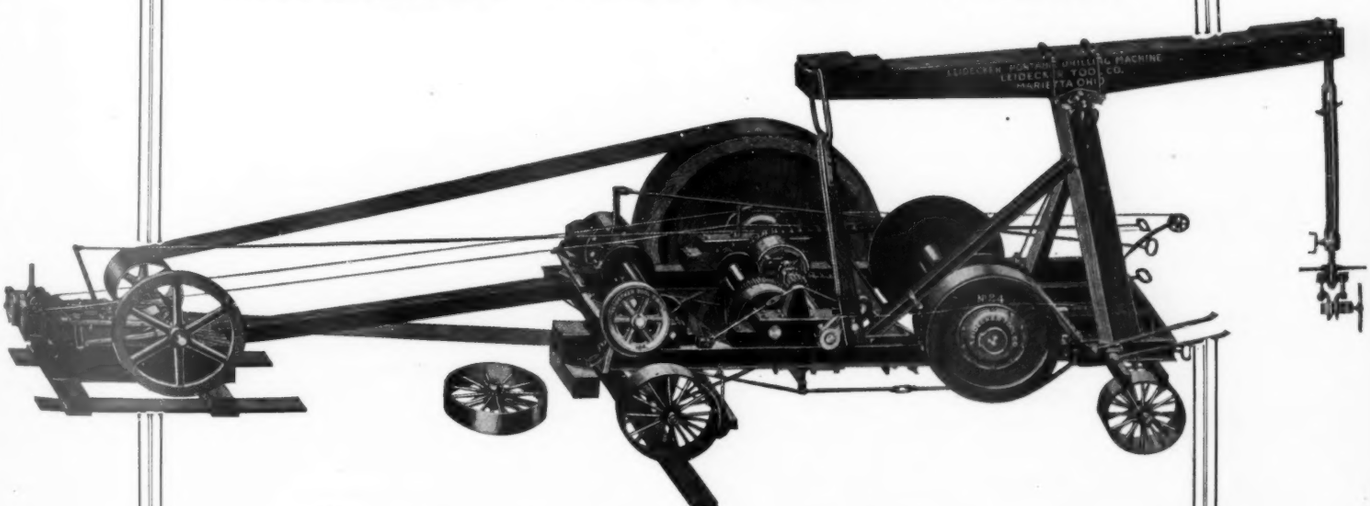

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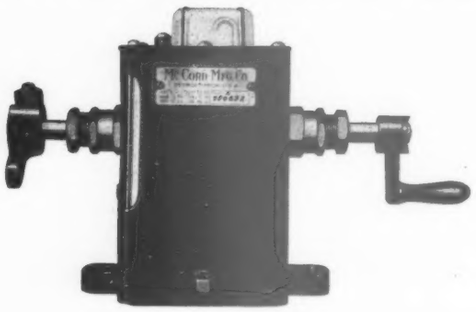

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F. P. Whitfield, Torch Oil Co., St. Louis, Mo.
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Ralph T. Baker, The Oil & Gas Journal, Chicago, Ill.
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O. W. Beack, Fulton Iron Works Co., St. Louis, Mo.
Thomas Beaghen, Jr., Mexican Petroleum Corp., New York, N. Y.
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M. G. Billingslea, White Star Refining Co., Detroit, Mich.
Frank J. Binz, Monroe, La., Carbon Co., St. Louis, Mo.
J. J. Bissett, Continental Supply Co., Fort Worth, Tex.
Charles Blake, L. L. Coryell and Son, Auburn, Neb.
Harry Bletzster, Kansas City, Mo.
E. F. Borgolte, Acme Petroleum Co., Kansas City, Mo.
M. H. Bottom, Foamite Childs Corp., Utica, N. Y.
D. J. Brown, Oil Well Supply Co., Pittsburgh, Pa.
E. R. Brown, Magnolia Petroleum Co., Dallas, Tex.
B. M. Browne, Great Western Oil Co., Cleveland, Ohio.
F. C. Buchanan, Columbian Steel Tank Co., Kansas City, Mo.
H. A. Buehler, State Geologist, Missouri, Rolla, Mo.
Milton R. Bump, Henry Doherty & Co., New York, N. Y.
C. E. Burlingame, Bartlesville, Okla.
W. Everit Burnet, Strong, Sturgis & Co., New York City.
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J. M. Carson, Taxman Refining Co., Chicago, Ill.
A. W. Caward, Hawkeye Oil Co., Waterloo, Iowa.
W. B. Caward, Hawkeye Oil Co., Waterloo, Iowa.
J. C. Case, Vacuum Oil Co., New York.
A. R. Chappell, Apex Petroleum Co., St. Louis, Mo.
W. G. Clark, Pure Oil Co., Automotive Eng. Dept., Columbus, Ohio.
A. Ludlow Clayden, Sun Oil Co., Philadelphia, Pa.
Charles Y. Clayton, U. S Bureau of Mines & Missouri S. of M., Rolla, Mo.
Guy K. Cogswell, Heat Equip. Corp., Lincoln, Neb.
A. J. Connors, Missouri Pacific R. R., St. Louis, Mo.
George M. Cook, Standard Oil Co. of Indiana, Chicago, Ill.
Geo Coryell, Coryell Oil Co., Lincoln, Neb.
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L. L. Coryell, Sr., Pres. Nebraska Independ. Oil Men's Assn., Lincoln, Neb.
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Geo. W. Craig, Asphalt Association, Chicago, Ill.
L. R. Crawford, Paragon Refining Co., Toledo, Ohio.
James A. Cronin, Standard Oil Co., Cal., San Francisco, Cal.
C. R. Crowell, Thos. M. Bowers Co., Chicago, Ill.
G. R. Curtis, Empire Refineries, Inc., Okmulgee, Okla.
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Arthur L. Davis, Standard Oil Co., Ind., Wood River, Ill.
O. F. Dawson, National Supply Co., Midwest, Tulsa, Okla.
James E. DeLong, Waukesha Motor Co., Waukesha, Wis.
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W. F. Faragher, Mellon Institute, Pittsburgh, Pa.
R. H. Fash, Fort Worth Laboratories, Fort Worth, Tex.
D. S. Faulkner, Union Tool Co., Torrance, Cal.
Wm. H. Ferguson, Continental Oil Co., Denver, Colo.
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T. J. Flannelly, Prairie Oil & Gas Co., Independence, Kans.
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W. W. Fondren, Humble Oil Refining Co., Houston, Tex.
J. P. Foraker, Chicago Crucible Co., Chicago, Ill.
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C. R. Krause, Lee C. Moore & Co., Inc., Tulsa, Okla.
G. R. Kyle, U. S. Rubber Co., New York, N. Y.
W. G. Lackey, Marland Oil Co., Ponca City, Okla.
F. R. Lang, Roxana Petroleum Corp., Wood River, Ill.
Leroy M. Law, New Orleans Ref. Co., Inc., New Orleans, La.
M. M. Leighton, Illinois Geological Survey, Urbana, Ill.
John D. Lemex, Oil Well Supply Co., Tulsa, Okla.
M. W. Link, Crane Co., Chicago, Ill.
H. J. Lockhart, Parkersburg Rig & Reel Co., Parkersburg, W. Va.
Robert Davis Longyear, E. J. Longyear Co., Minneapolis, Minn.
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Richard W. Meade, People's Motorbus Co. of St. Louis, University City, Mo.
S. Messer, Independent Refining Co., Oil City, Pa.
H. E. Michener, Sun Oil Co., Philadelphia, Pa.
R. A. Miller, Ind. Pipe Line, Huntington, Ind.
G. A. Montgomery, Titusville Forge Co., Titusville, Pa.
Nelson K. Moody, Prairie Oil & Gas Co., Independence, Kans.
Clarence Morris, The Oil & Gas Journal, Tulsa, Okla.
F. A. Muench, Diamond Kerosene Co., Inc., Carlinville, Ill.
J. R. Munce, Arkansas Natural Gas Co., Shreveport, La.
P. J. Murphy, Wall Street Journal, New York, N. Y.
G. R. Nutty, Gulf Refining Co., Pittsburgh, Pa.
C. H. O'Bannon, R. & J. Dick Co., Inc., St. Louis, Mo.
J. F. O'Brien, Plateau Oil Co., Fort Worth, Tex.
G. L. Oliensis, Barber Asphalt Co., Philadelphia, Pa.
P. Papendiell, Scientific Instrument Co., Detroit, Mich.
O. J. Parks, General American Tank Car Corp., Chicago, Ill.
C. R. Peck, Protectoseal Co., Chicago, Ill.
J. E. Pennybacker, Asphalt Association, New York, N. Y.
J. Howard Pew, Sun Oil Co., Philadelphia, Pa.
T. M. Poole, Brown Instrument Co., Philadelphia, Pa.
Byron Post, Oil Well Supply Co., Tulsa, Okla.
J. M. Post, Oil Well Supply Co., Shreveport, La.
M. F. Powers, Victor Gasoline Co., Tulsa, Okla.
A. D. Prendugast, The Texas Co., St. Louis, Mo.
L. C. Quackenbush, Tide Water Oil Co., New York, N. Y.
J. R. Reader, Warson Petroleum Co., Inc., St. Louis, Mo
C. W. Reed, Tide Water Oil Co., New York, N. Y.
H. S. Robinson, W. H. Barber Co., Chicago, Ill.
C. W. Ryan, Roxana Petroleum Corp., Wood River, Ill.
D. P. Sands, Manhattan Rubber Mfg. Co., Tulsa, Okla.
E. O. Sanguinet, Wm. S. Barnickel & Co., Webster Groves, Mo.
Ludwig Schmidt, U. S. Bureau of Mines, Bartlesville, Okla.
Guy Scouler, Chicago, Ill.
F. M. Seibert, Gulf Oil Corp., Houston, Tex.
J. L. Shakely, Frick-Reid Supply Co., Tulsa, Okla.
E. L. Shea, Tide Water Oil Co., New York City, N. Y.
C. G. Sheffield, Standard Oil Co., N. J., New York, N. Y.
D. R. Shouvlin, Superior Gas Engine Co., Springfield, Ohio.
J. P. Shouvlin, Superior Gas Engine Co., Springfield, Ohio.
W. G. Skelly, Skelly Oil Co., Tulsa, Okla.
Chandler P. Smith, Foamite Childs Corp., Utica, N. Y.
E. Gardner Smith, Williams Oilomatic Burner, Bloomington, Ill.
Earl J. Smith, Underwriters Laboratories, Chicago, Ill.
Lawrence E. Smith, National Petroleum News, Cleveland, Ohio.
James E. Smitherman, Shreveport, La.
G. A. Spang, Spang & Co., Butler, Pa.
Alexander C. Spencer, Imperial Oil Refineries, Ltd., Sarnia, Ontario, Canada.
M. G. Stewart, Pelican Wall Tool & Supply Co., Shreveport, La.
T. T. Stines, Prairie Pipe Line Co., Kansas City, Mo.
John R. Suman, Rio Bravo Oil Co. (Southern Pacific), Houston, Tex.
M. W. Teats, R. & J. Dick Co., Inc. "Dickbelt," Kansas City, Mo.
F. H. Thomas, C. & G. Cooper Co., Mt. Vernon, Ohio.
Erle Thompson, Thompson Oil & Supply Co., Oshkosh, Wis.
W. H. Thompson, Oil Well Supply Co., Fort Worth, Tex.
P. J. Tillman, Benzo Gas Motor Fuel Co., St. Louis, Mo.
Thos. E. Toney, Pennant Oil & Gas Co., Tulsa, Okla.
J. D. Toomey, Robinson, Ill.
J. F. Tucker, National Supply Co. of Texas, Houston, Tex.
W. R. Tyson, Tioga Steel & Iron Co., Philadelphia, Pa.
Chas. Van Overbeke, Standard Oil Co. of Kentucky, Louisville, Ky.
L. B. Wackman, Wackman Steel Barrel Co., St. Louis, Mo.
L. M. Wallace, A. P. Green Fire Brick Co., Mexico, Mo.
William Warr, Manhattan Rubber Mfg. Co., Passaic, N. J.
C. L. Warwick, American Society for Testing Materials, Philadelphia, Pa.
F. J. Washington, Moline Oil Co., Moline, Ill.
E. E. Watts, Farish-Watts-Collins-Crosby, Houston, Tex.
Hugo Weidmann, National Tube Co., New Orleans, La.
Ira G. Wetherill, National Supply Co., Independence, Kans.
Thomas Wheatley, Wheatley Bros. Machinery Co., Kansas City, Mo.
H. A. Wheeler, Petroleum Oil & Gas Co., St. Louis, Mo.
C. F. Whittier, United Oil Co., Los Angeles, Cal.
C. U. Williams, Williams Oilomatic Burner, Bloomington, Ill.
Robert E. Wilson, Standard Oil Co. of Indiana, Chicago, Ill.
Jas. H. Wood, The Texas Co., Chicago, Ill.
E. Pace Woods, Heat Equipment Corp. of Nebraska, Lincoln, Neb.
Manton M. Wyvell, Gotham Oil & Gas Co., Washington, D. C.
R. M. Young, Carter Oil Co., Tulsa, Okla.

Third Day's Registration

E. J. Adams, Geo. P. Jones Oil Co., St. Louis, Mo.
R. A. Airhart, American Tripoli Co., St. Louis, Mo.
C. O. Barnett, Bridgeport, Ill.
T. Beaghen, Jr., Mexican Pet. Corp., New York, N. Y.
A. J. Bechestobill, Pierce Oil Corp., St. Louis, Mo.
D. F. Bobrock, Crescent Oil & Supply Co., St. Louis, Mo.
J. E. Bowman, Cities Service Oil Co., Fort Worth, Tex.
Erwin R. Brigham, North American Car Co., Chicago, Ill.
C. C Brown, Marland Oil Co., Ponca City, Okla.
A. F. Buck, Henry H. Cross Co., Chicago, Ill.
B. E. Bush, Diamond Refining Co., Kansas City, Mo.
George B. Bush, Transport Oil Co., Los Angeles, Cal.
P. B. Butler, Barnsdall Zinc Co., Joplin, Mo.
A. E. Canaday, Foamite Childs Corp., Kansas City, Mo.
C. P. Clark, Clark Bros. Co., Olean, N. Y.
Maurice Coburn, Pennsylvania R. R., Indianapolis, Ind.
E. F. Coste, Eugene Coste & Co., Dallas,
W. G. Cummins, Gas Engineering & Cons. Co., Tulsa, Okla.
Phil R. Davis, University of Pittsburgh, Pittsburgh, Pa.
V. B. Day, Cities Service Oil Co., Chicago, Ill.
Bryant Dedman, Fort Worth Drilling Tool Co., Fort Worth, Tex.
L. B. Denning, Ohio Fuel Supply Co., Pittsburgh, Pa.
Col. B. W. Dunn, Bureau of Explosives, New York, N. Y.
Scott R. Frost, Henry L. Doherty & Co., New York, N. Y.
A. M. Griffin, Columbian Steel Tank Co., Kansas City, Mo.
James E. Hannegan, Southwestern Passenger Assn., St. Louis, Mo.
Benjamin G. Harmon, Mahr Mfg. Co., Chicago, Ill.
W. C. Henning, A. Leschen & Sons Rope Co., St Louis, Mo.
E. E. Jensen, Pierce Oil Corp., St. Louis, Mo.
Sam Katz, Cia "Imperial" S. A., Tampico, Mexico.
J. X. Kinberger, Chicago & Alton R. R., St. Louis, Mo.
W. L. Kistler, Prod. & Ref. Corp., Tulsa, Okla.
E. Klappenbach, The Oil & Gas Journal, Chicago, Ill.
F. L. Kuhlman, Columbia Oil Co., Inc., St. Louis, Mo.
Robt. Law, Jr., Barnsdall Corp., New York, N. Y.
W. H. Leininger, Pierce Oil Corp., St. Louis, Mo.
G. V. B. Levings, American Tripoli Co., Seneca, Mo.
James W. McCabe, Chicago Pneumatic Tool Co., New York, N. Y.
A. P. McCormick, Standard Oil Co., Indiana, Wood River, Ill.
W. S. Madden, Henry L. Doherty & Co., St. Louis, Mo.
Frank L. Maire, Maire Bros., Lima, Ohio.
J. S. Mellon, Dunn Mfg. Co., Oxnard, Cal.
M. H. Mercer, Continental Supply Co., Bridgeport, Ill.
J. C. Milder, British-American Oil Co., Toronto, Ont.
G. A. Montgomery, Titusville Forge Co., Titusville, Pa.
S. A. Montgomery, Standard Oil Co., Ind., Wood River, Ill.
Walter O'Bannon, Walter O'Bannon Co., Tulsa, Okla.
Earl Oliver, Marland Oil Co. of Mexico, Ponca City, Okla.
G. A. Osborne, El Dorado, Ark.
Whit. B. Owen, Santa Fe R. R., St. Louis, Mo.
V. E. Parker, Dayton Pump & Mfg. Co., Dayton, Ohio.
John F. Penrose, National Oil Co., New York City, N. Y.
W. M. Powers, Lubrite Refining Co., St. Louis, Mo.
C. A. Ralston, Roxana Petroleum Corp., St. Louis, Mo.
G. G. Rumley, Roxana Petroleum Corp., Wood River, Ill.
H. G. Trimblee, National Supply Co., Toledo, Ohio.
W. F. Veatch, Flexo Supply Co., St. Louis, Mo.
A. V. Wadsworth, Parkersburg Rig & Reel Co., Parkersburg, W. Va.
C. F. Whittier, Richfield Oil Co., Los Angeles, Cal.
Harrison Will, Frisco Lines, St. Louis, Mo.

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Mt. Vernon, Ohio, U.S.A.

Executive Offices Pittsburgh, Penna. Tulsa, Okla. Casper, Wyo.

CABLE TOOL JOINTS ENDORSED TO A. P. I.

(Continued from Page 47)

master template manufacturer who is to be instructed that such will be his authority to furnish.

D. The original certificate is to be kept by the manufacturer to whom issued as his authority to use the registered trade mark of the American Petroleum Institute on cable drilling tool joints.

E. All cable drilling tool joint master templates to be consecutively numbered by the manufacturer, the numbers to be supplied on the certificate issued by the American Petroleum Institute.

F. The American Petroleum Institute shall keep a careful record of the certificates—sizes and numbers of master templates and to whom furnished.

G. The American Petroleum Institute shall furnish to each cable drilling tool joint manufacturer who has purchased and has in use the American Petroleum Institute master templates, a record of all licensed users, showing sizes and numbers.

H. Should a manufacturer sell out or dispose of his business carrying with it officially furnished master templates for the cable drilling tool joints, the purchaser may have the certificate transferred upon request and the return of the old certificates to the American Petroleum Institute.

I. Should a master template of the cable drilling tool joint be destroyed or lost—the manufacturer should return the certificate with explanation to the American Petroleum Institute that their records may at all times be correct.

That we recommend to the American Petroleum Institute that each manufacturer adopt a uniform method of stamping joints using the larger dimension sizes of the taper, for example—the $2\frac{3}{4}$ x $3\frac{3}{4}$ — 7 would be stamped $3\frac{3}{4}$—7 A. P. I. (Trade Mark). (Manufacturer's name).

That we recommend to the American Petroleum Institute the following resolutions:

Resolved: Should larger or smaller sizes of joints than now adopted be required, it shall be the duty of the American Petroleum Institute to develop them, that such might immediately become a standard and when a new joint is developed every manufacturer will be immediately notified.

Resolved: That should a dispute between manufacturer and user arise or among manufacturers as to the correctness of joints, such disputes may be submitted to the American Petroleum Institute for a decision.

Resolved: That we, the American Petroleum Institute, take steps immediately through advertising or some other

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and at the same time increase the efficiency and dependability of your plant. "Y" Engine owners are demonstrating this every day right in your own vicinity. Ask to see their plant in operation—then inquire as to the savings they have effected in fuel cost, consumption, time and attention.

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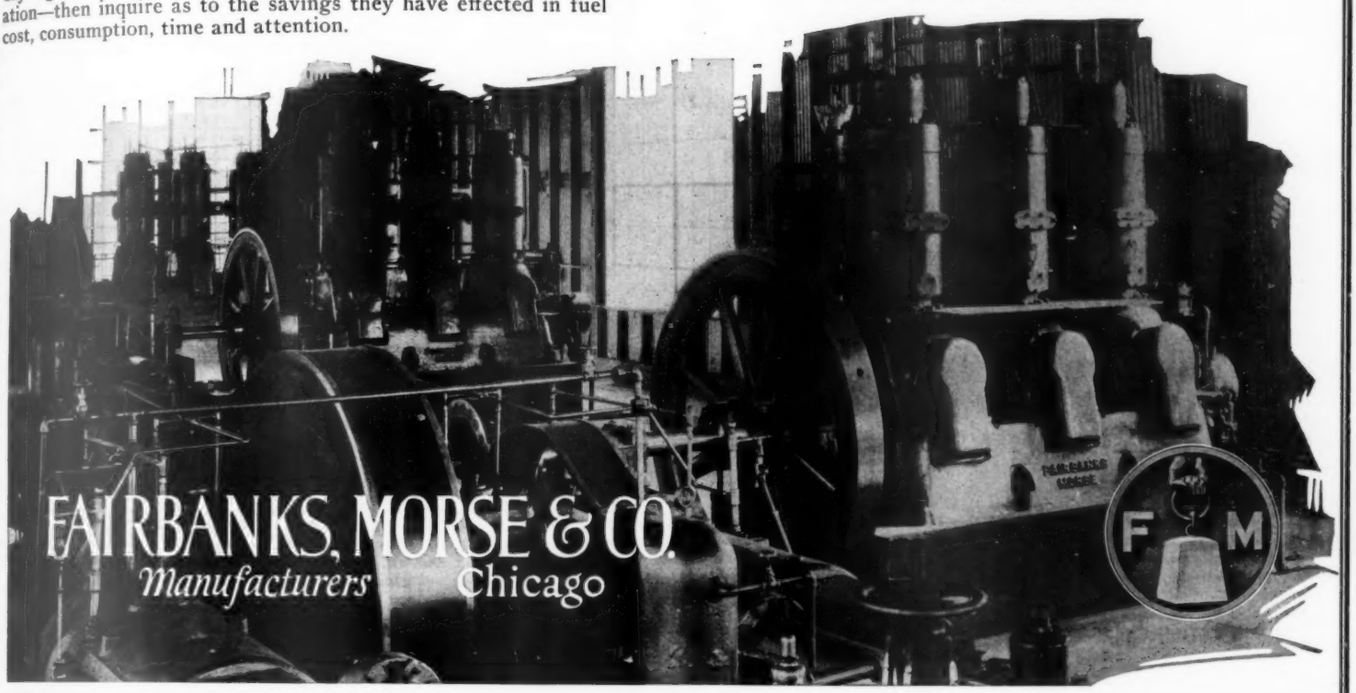

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STOP WASTING OIL

Tight steel roofs on your oil storage tanks reduce evaporation losses by 70%. The average annual losses where leaky roofs are used amount, according to U. S. Bureau of Mines Bulletin No. 200, to 2% to 3% of the volume where crude oil is stored and 4% to 5% for gasoline. The portion evaporated from crude oil in storage is in reality not crude oil but merchantable gasoline.

Can you afford to stand this loss year after year? Would it not be better to use Pittsburgh-Des Moines tight storage tanks than the ordinary leaky roofs? ¼" steel roofs caulked gas-tight by the Pittsburgh-Des Moines method will save 60 to 70% of this loss—enough, even at present prices of oil, to pay for the cost of the roof the first year!

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manner or channels to notify all interested in the purchase, use or manufacture of cable drilling tool joints of the standard joints now adopted, urging cooperation and in ordering to insist on cable drilling tool joints carrying the American Petroleum Institute registered trade mark.

Resolved: That inasmuch as standard cable drilling tool joints are now adopted and it being necessary for manufacturers to gradually work toward standardizing, that the American Petroleum Institute immediately procure the master templates that the manufacturers may commence work.

Resolved: (A) That the American Petroleum Institute get ready quickly as possible its part of the plan as outlined. (B) That the plan be not operative until January 1, 1925.

(C) That is is understood should any manufacturer get prepared and ready to use the registered trade mark of the American Petroleum Institute before January 1, 1925, he may be granted a certificate for such joints, with privilege of the use of the registered trade mark.

OKLAHOMA FIELDS

(Continued from Page 38)

mingham & Kelsey's No. 1 Vandyke, SW cor. NE, Section 8-11-12w.

In Stephens County, Sapping and others were forced to abandon their No. 2, CWL SW NE NW, Section 2-2n-5w, because of lack of funds.

Creek and Kay Counties

In Creek County, Carmen and others had a 470-bbl. producer from sand at 2,914-15 feet in their No. 1-A Tiger, NE cor. SE, Section 5-15-9. The Midwest Oil Co. and Gulf Production Co. were underreaming the 6-inch casing in their No. 4 Gooden, NE cor. NW NE, Section 20-15-10. Tom Kelly shot his No. 1 McNac, SW cor. NW, Section 3-14-10, with 15 quarts in sand at 3,230-34 feet and it made 25 bbls. of oil and 5 bbls. of water.

In Kay County, the Carter Oil Co. abandoned its No. 1 Fields, SE cor. SW, Section 20-27-1e, as dry at 1,650 feet. The Blackwell Oil & Gas Co. had a rig in place for its No. 1 Crouch, SW cor. Section 10-27-1w, and the Eastern Oil Co.'s No. 2 Mayette, NE cor. SW, Section 7-26-1e, was dry and abandoned at 1,323 feet. The Lucky Leaf Oil Co. was pumping 10 bbls. from its No. 1 Ragan, NE cor. NW, Section 15-27-1w, having plugged it back to 3,148 feet from 3,285 feet. Pay sand was from 3,114 to 3,148 feet.

In Okmulgee County, Charles King's No. 1 Bruner, CNL SW SW, Section 11-11-13, was good for 4,000,000 feet of gas from sand at 1,886-1,902 feet. The Wiser Oil Co.'s No. 2, NW cor. SW SW, Section 18-11-12, which was formerly good for 27,000,000 feet of gas from sand at 2,832-40 feet, has been exhausted to 12,000,000 feet. The Wooster Oil Co. was drilling at 850 feet in its No. 1 Bruner, C SE SE, Section 11-11-13.

E. R. Black had a 50-bbl. showing in his No. 2 Murrell, SW cor. NW NW, Section 26-13-11, from sand at 2,528-40 feet, and was underreaming the 5-inch casing at 2,528 feet.

Okfuskee Producer

The Atlantic Oil Producing Co. brought in a well estimated to be good for 350 bbls. in their No. 1 Jackson, in the NW SW, Section 35-11-11, Okfuskee County, producing from sand topped at 2,500 feet and drilled 8 feet in. The 8-inch casing was being set Monday.

The Shaffer Oil & Refining Co. and others were deepening their No. 1 Bruner, SW cor. NE NE, Section 6-19-12, near Tulsa, and increased its flow from 50 bbls. to about 430 bbls. daily. The first sand was topped some time ago at 1,915 feet. The bit is now at 2,068 feet in a hard formation and will probably not go much deeper.

A stray sand between the Dutcher and Wilcox formations was picked up at 3,390 feet by No. 4 Warnorkee, being drilled by the Shaffer Oil & Refining Co. and Brown & Clark, in Section 15-15-8, Creek County, offsetting Gypsy Oil Co.'s well in Section 16-15-8, being a south offset to the Cosden Oil & Gas Co.'s drilling well. It is also a diagonal offset to another well being drilled by the Kawawha Oil Co. There was 1,000 feet of oil in the hole with the usual [illegible] scratched.

The Shaffer Oil & Refining Co.'s No. 1 Emily Smith, NE cor. SW, Section 15-19-9, lost the hole at 2,249 feet and was skidding the rig.

A hole full of salt water was all that the Independent Oil & Gas Co. and Atlantic Producing Co. got in their No. 1 Long, SE NE SW NE, Section 22-4-[illegible] at 3,214 feet. It will probably be drilled deeper.

Creek County

A 40-bbl. well, producing naturally from the sand at 2,586-2,605 feet was brought in by Earl Clay and others in their No. 2 Barnett, CSL NE NW SE, Section 34-16-9.

The Cortez Oil Co.'s No. 2 Wilson, NE cor. SE NW, Section 22-16-8, which was making 175 bbls. naturally from the sand at 3,174-77 feet, at last reports was flowing 400 bbls. through the tubing with packer. The same company's No. 3 Wilson, which originally was good for 5,000 bbls. natural, from sand at 3,164-65 feet, was flowing 600 bbls. in the same manner.

Tonkawa District

In the Tonkawa district, The Texas Co. was drilling its No. 1 Gillett, SE cor. SW, Section 27-25-1w, at 2,455 feet. The Blackwell Oil & Gas Co. had a 200-bbl. natural well in its No. 7-B Corrigan, CEL SE NE, Section 34-25-1w, sand being found at 2,432-97 feet.

The Comar's No. 21 Blubaugh, C SW, Section 2-24-1w, was making 60 bbls. naturally from sand at 2,538-2,611 feet.

The continuation of the Burbank shut-down agreement caused a cessation of the activity that had begun to be evident in that important area, and 22 wells were shut down in the three sections, 15, 16 and 22-27-5. The Comar Oil Co. was drilling its No. 3 Thompson, CSL SW NE SW, Section 15-27-5, and its No. 5 Thompson, SW cor. NW SW, in the same section, at 2,600 feet.

The Skelly Oil Co. and the Phillips Petroleum Co. abandoned the location for their No. 5 Thompson, SW cor. NW, Section 22-27-5. The Tidal-Osage Oil Co.'s No. 15, C NW SE SW, Section 6-26-6, was shut down at 2,311 feet, and the Cosden Oil & Gas Co.'s No. 8, CWL NW SW NW, Section 8-26-6, at 2,770 feet.

More Work in Osage

In Osage County, the signs of activity presage better times ahead.

The Petroleum Drilling Co. found the top of a gas sand at 1,590 feet and in No. 6-A, CWL NE NE SE, Section 17-25-9, was good for 2,000,000 feet at a depth of 1,601 feet. The Oklahoma Natural Gas Co. had another gasser in its No. 632, CEL NW NW SW, Section 27-20-12, and was running the 6-inch casing at 1,729 feet with the well showing 1,500,000 feet of gas from the Bartlesville sand at 1,324-59 feet.

Burbank Production

The detailed report of daily average production by companies in the Burbank Field, for the week ended December 12, follows:

Company—	Wells	Bbls.
Carter Oil Co.	165	8,155
Comar Oil Co.	7	350
Cosden Oil & Gas Co.	63	1,890
Devonian Oil Co.	16	160
Gardner Pet. Co.	20	270
Gypsy Oil Co.	149	13,264
Kawanee Oil & Gas Co.	13	390
Laurel Oil & Gas Co.	10	300
Lorraine Pet. Co.	15	300
Midland Oil Co.	6	180
Mid-Kansas Oil & Gas Co.	29	1,450
Peters & Oliphant	1	175
Phillips Pet. Co. and Delmar Oil Co.	1	5
	86	1,505
Phillips Petroleum Co.		
Phillips Pet. Co. and Skelly Oil Co.	141	1,905
Prairie Oil & Gas Co.	96	1,536
Producers & Refiners Corp.	38	627
Roxana Petroleum Corp.	97	1,455
Simons, Moore and others	30	270
Sinclair Oil & Gas Co.	124	2,232
Skelly Oil Co.	4	70
Tidal-Osage Oil Co.	61	1,281
Twin State Oil Co.	5	90
Total	1,065	43,205
Kay County—		
George S. Boie	1	30
Carter Oil Co.	3	150
Comar Oil Co.	7	1,750
Cosden Oil & Gas Co.	2	1,500

(Continued on Page 143)

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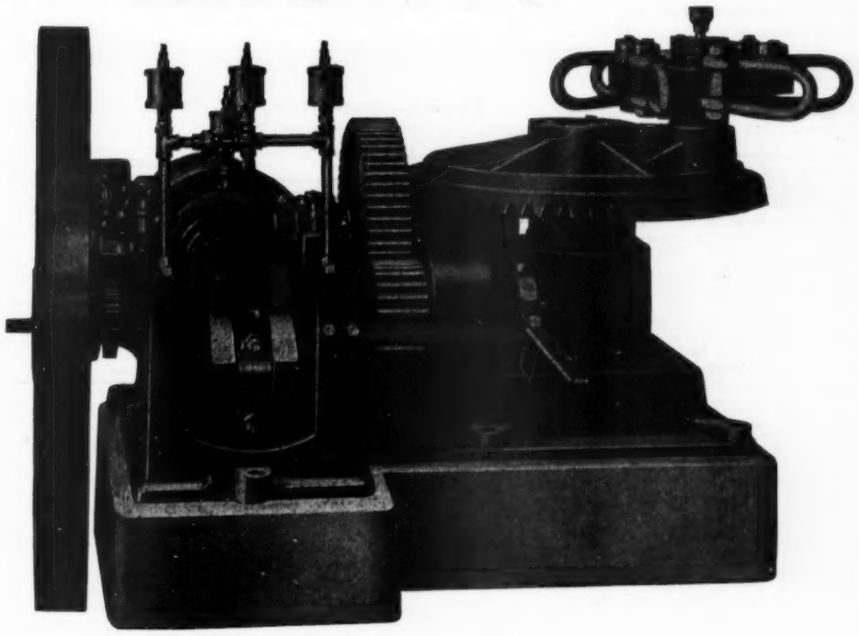

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WILL FURNISH a 320 to 2,500-acre block in Mendocino County, California, for drilling contract. W. N. Voegtly, 455 West Tenth St., San Pedro, Calif.

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30,000 ACRES leases, blocked 95 per cent solid in central part of Monroe County, Alabama. Geological report favorable for presence of gas and petroleum. Would be glad to hear from anyone interested in development of a wildcat proposition of this kind. G. L. Nettles, Tunnel Springs, Ala.

TEXAS OIL LEASES 10c an acre up to $10 an acre. Will sell tracts of 10 acres or more. Have 30,000 acres to choose from. All new five-year leases. Get full particulars. Gulf Realty Co., 1093 Bedell Bldg., San Antonio, Tex.

I HAVE wildcat acreage for sale in vicinity of well located by the same geologist who discovered the Sayre oil field and recommended by him to be as safe an investment as the Sayre Field. I can sell for $2 per acre and up. Dr. W. R. German, Canadian, Tex.

I HAVE 14,000-acre block to give for two test wells. I will furnish maps and report. J. H. Cumley, care The Oil and Gas Journal, Tulsa, Okla.

REAGAN COUNTY LEASES—Close in, choicest in the field; from 5 to 10,000 acres. Price $2 to $25 per acre; advancing daily. Better act NOW. Here since 1906. Riser Realty Co., Big Lake, Tex.

10c AN ACRE and up for leases in Guadalupe, Blanco, Medina, Zapata and many other counties. Will sell 10 acres or more. All new five year leases. Get particulars. Gulf Realty Co., 1014 Bedell Bldg., San Antonio, Tex.

185-ACRE FEE for sale on probable salt dome, 18 miles southeast of Houston, Tex.; 1 mile east of Ellington Aviation Field. Wildcat shut down on adjoining tract; valuable agriculture; guaranteed title; sacrifice price. Owner, W. D. Port, 10024 Burton Ave., Cleveland, Ohio.

WEWOKA leases and royalties; drilling proposition. Only high-class leases offered; guarantee delivery. E. E. Tomlinson, Box 363, Phone 328, Wewoka, Okla.

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FOR SALE—Leases or production in shallow field, wells from 700 feet to 950 feet deep. Will sell acreage or production cheap. Owner, P. O. Box No. 385, Logan, Ohio.

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WEWOKA, OKLAHOMA'S newest oil field, leases and royalties in Seminole and Pottawatomie Counties. Royalty in 33-8-8. W. R. Turner, 2123 Warren Ave., Chicago, Ill.

Answer the 1924 Red Cross Roll Call.

FOR OIL and Gas Leases on school land in the famous San Juan Basin, New Mexico, priced right, address P. O. Box 366, Farmington, N. M.

Answer the 1924 Red Cross Roll Call.

6,000 ACRES for drilling contract; extreme south end Lonoke County, Arkansas. R. H. Hardin, England, Ark.

ANSWER the biggest classified advertisement ever written—

"Buy Christmas Seals"

In so doing you will be helping a most worthy cause and spreading happiness.

FOR SALE—Leases and royalties in Arkansas oil belt, Ouachita, Columbia and Lafayette Counties. Address Box 562, Magnolia, Ark.

PRODUCERS, Refiners and others interested can secure protection acreage on one of the best anticlines in Montana. Recommended by U. S. G. S. and leading private geologists. Test well now drilling. Walter F. Brittan, Poplar, Mont.

WILL TRADE oil leases near drilling well in Childress County, Texas, on structure for similar leases or royalties near other drilling wildcat wells. Our well is fully financed and contracted to reliable people. No rentals till 1926. 300 Alworth Bldg., Duluth, Minn.

FOR SALE—75 acres of land in 15 and 16-12-21, Sequoyah land, about 5 miles south of Empire drilling well. Good land, and a bargain at $10 an acre. J. L. Haner, Muskogee, Okla.

SHEFFIELD TERRACE (Marathon Fold) and Balcones Fault leases. We have them for 10c an acre up in tracts of 10 acres or more. All new five-year leases. 30,000 acres to choose from. Get particulars. Gulf Realty Co., 1017 Bedell Bldg., San Antonio, Tex.

LEASES FREE for drilling offsets, Allen and Warren Counties, Kentucky; 300 to 600 feet deep. Box 489, Bowling Green, Ky.

OIL OPERATORS—Montgomery County, Mississippi, world's next big oil field; 3,000 acres leases for well. W. C. Brooks, 282 S. Front St., Memphis, Tenn.

OIL LEASES

We have leases 20 to 50 miles from the new Luling Field in Texas from 10c an acre up to $1 an acre in tracts of 10 acres up to 10,000 acres. We have many other leases along Balcones Fault and Sheffield (Marathon Fold) Terrace. Here are a few of our leases:

Blanco County	10c an acre
Bandera County	30c an acre
Comal County	15c an acre
Hays County	20c an acre
Guadalupe County	$1 an acre
Kerr County	15c an acre
Medina County	40c an acre
Travis County	25c an acre
Zapata County	$1 an acre

We also have leases less than 1 mile from production at higher prices. All these leases are the standard form 88 5-year leases and all were bought direct by us from the land owner, which accounts for the extremely low prices. We have 30,000 acres on hand to take care of your orders. Don't send any money now; get particulars and maps first. No obligation.

GULF REALTY CO.
1022 Bedell Bldg. San Antonio, Tex.

LEASES—PRODUCTION

LARGE BLOCK north central Texas leases. Oil territory, good geology, big structure. Want well drilled for acreage. Box 54, Salina, Kans.

40-ACRE farm, good house, barn, well, orchard, part bottom, about 20 acres cultivation, close to school, church and small town; horse, pigs and chickens. First with $650 gets farm and all. Bee Vanemburg, Moorefield, Ark.

FOR SALE—EQUIPMENT

FOR SALE—Used casing and line pipe in A-1 condition, all sizes. Write or wire for prices. Cisco Pipe & Supply Co., Cisco, Tex.

FOR SALE — A 28 Star, fully equipped, near Sedan, Kans. Will sell cheap to close a copartnership. W. G. Kountz, Webb City, Mo.

DON'T BUY a light plant until you see Farmelectric, the Ford Parts Plant, and get prices and terms. Chas. S. Brown, state distributor, 21 N. Dewey, Oklahoma City, Okla.

THE WESTERMAN STUFFING Box does not pack with rubber rings and will give long, continuous service without attention. If your supply dealer hasn't them, send your order direct to The Dragon Mfg. Co., Marietta, Ohio.

FOR SALE—23 Star Drilling Machine in good condition and a complete set of tools; will sell very reasonable for cash. J. H. Brocksmith, 1856 Menard St., St. Louis, Mo.

SECOND-HAND PIPE—All kinds of used pipe. At present we have 10 miles of 8-inch oil line pipe. For particulars write Ohio Iron & Supply Co., 909 St. Johns Ave., Lima, Ohio.

FOR SALE—18,000 feet 8-inch steel line pipe, has been in ground for 5 years to carry stored water, but is in good condition. Write us for prices. Pipe will be loaded at Checotah, Okla. R. E. Lynch & Sons, Tulsa, Okla.

FOR SALE

3—300 h. p. gas producers
3—350 h. p. gas engines
1—18x8½x14 belt driven compressor
Complete electric plants both D. C. and A. C.
All kinds of equipment bought and sold.
R. W. Russell, St. Mary's, W. Va.

FOR SALE — Complete artificial gas plant. Four-foot water gas set, capacity eight to ten thousand cubic feet per hour. For particulars write The Upham Gas Co. of Texas, Mineral Wells, Tex.

THREE 100 h. p. Rathburn-Jones natural or producer gas engines, one 100-h. p. Bruce natural gas engine, one Forman-Bassett gas producer. Also direct current generators for above engines. All in A-1 condition, and will be sold cheap. Banner Machine Co., Columbiana, Ohio.

USED GAS ENGINES—20, 50, 110 and 150 h. p. Bessemers; 35 h. p. Chicago Pneumatic; 65, 100 and 125 h. p. Millers; 401-ft. Chicago Gas-Driven Air Compressor, 100-lb. working pressure. Ask for our used machinery stock sheet. Landreth Machinery Co., Joplin, Mo.

FOR SALE—Three 110-H. P. Miller Gas Engines, direct connected to Watts' two-stage compressors; low side 11x20; high side 6½x20.

TWO 85-H. P. Miller Gas Engines; direct connected to Watts' twin-cylinder vacuum pump; 18-inch bore, 20-inch stroke.

All of above located 2½ miles north of Elgin, Kans. Address Roth Gasoline Corp., Independence, Kans.

WANTED — Every reader of the Classified Section to forget the setbacks and trials of the past year and think of the big year ahead so that they may really enjoy

A Merry Christmas
Classified Wants Department

FOR SALE—EQUIPMENT

FOR SALE, CHEAP — Standard rig complete, Oil Well Supply Co. outfit. Address John Ewen, Alanreed, Tex.

BRAND NEW pipe tools, original cases, for 9-inch, 10-inch and 12-inch pipe; 3 Toledo Pipe Threaders No. 4, each, $185; also 4 Barnes No. 7 Pipe Cutters, each, $15. Prices are f.o.b. cars, New York. Allen Ashley, 132 W. Forty-second St., New York.

FOR SALE — Turnbuckle rig, three boilers, engines, drilling and fishing tools. Will sell all or part, reasonable. Address Lock Box 18, Robinson, Ill.

FOR SALE—Gas, oil and steam engines, generators, motors, compressors and all kinds of second-hand equipment. Ask for our complete list. Acme Foundry & Machine Co., Coffeyville, Kans.

FOR SALE—A lot of fine, heavy, 12, 10, 8¼ and 6⅝-inch pipe in Garvin County, Oklahoma, at a great bargain. U. M. Shappell, Lima, Ohio.

FOR SALE—Geological library; U. S. Geologic Survey Annual Reports, Monographs, Professional Papers, Bulletins and Water Supply Papers; about 700 volumes; $350 f.o.b. F. C. Greene, 1430 S. Cincinnati, Tulsa, Okla.

EXPERIENCED oil jobber would like to hear from refiner or someone with capital to join in establishing bulk stations in Iowa. Address P. O. Box 227, Des Moines, Iowa.

TANK BOLTS
SAME-DAY SHIPMENT
5/16x¾-inch, ⅜x¾-inch, ⅜x1-inch, ⅜x1¼-inch, ½x1-inch.
Write or wire for quotation.
SHEETS—All gauges and sizes; galvanized, blue-enamel. Also corrugated and composition roofing. Plates to ½-inch.
STEEL MFG. & WAREHOUSE CO.
1447 Genesee St. Kansas City, Mo.

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FOR SALE—De Laval separator, good condition, less than half price. Bryte-Nelson Refining Co., 1171 Arcade, St. Louis, Mo.

STOREHOUSE OF INFORMATION

The Oil and Gas Journal contains statistics and unlimited information that is most valuable to the oil and gas man. Calls for back numbers are so numerous we are unable at all times to supply the demand—in fact, we can furnish very few back numbers. The issues missing from our files may be the ones you want. To make it possible for you, at all times, to refer to special articles or other information you desire, we have secured binders specially designed and durable and attractive in appearance that hold 26 numbers, or six months' issues. They are for sale at actual cost to us.

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Tulsa, Okla.

25 CENTS per line first insertion; 15c per line each additional insertion. Cash in advance.

CLASSIFIED WANTS

COPY must be in our office Friday prior to date of issue. Average 6 words to the line. Cash in advance

INCORPORATIONS

DELAWARE incorporator. Charters; fees small; forms. Chas. G. Guyer, 901 Orange St., Wilmington, Del.

WANTED

PRODUCING Royalties Wanted. Send full particulars and lowest cash price. H. M. Haverbeck, 50 Broad St., New York.

WANTED—110 or 125 h. p. Bessemer gas engine. Address Box A-5, care The Oil and Gas Journal, Tulsa, Okla.

WANTED—Two or three good blocks of acreage in East Texas for drilling contracts. Submit full details and best proposition in first letter. If not interested all data will be returned. Box 804, El Dorado, Ark.

WANTED — New capital to develop gas properties; company now supplying large market at good price. Will sell half interest. E. O. Mullin, 416 Robinson Bldg., Tulsa, Okla.

NEW INVENTION — Self-filling station, handles oil and gasoline, operates by dropping coin in slot. Parties want capital to install them. Box 135, Manchester, Kans.

Mae L. Russell, 1930 Lemon Street, South Pasadena, Cal., desires the address of her brother, William Lee Russell. Mr. Russell has worked in the Texas, Oklahoma, and Old Mexico oil fields. He was last heard from in Ranger, Texas, January 28, 1920. It is very necessary that Miss Russell get in touch with her brother. Anyone knowing the whereabouts of Mr. Russell will confer a favor by notifying Miss Russell.

BUSINESS OPPORTUNITY

To circularize the readers of The Oil and Gas Journal, once, it would cost more than $500. For a small sum you can reach these readers and place your proposition before them.

The classified rates are attractive. It costs but 25 cents the line for the first insertion and 15 cents the line for each additional insertion. Six words usually make a line. Cash with the order.

This useful table will help you to figure the cost of Classified Advertising in The Oil and Gas Journal. Keep it for reference:

	1 time	2 times	3 times	1 month
3 lines	$ .75	$1.20	$1.65	$2.10
4 lines	1.00	1.60	2.20	2.80
5 lines	1.25	2.00	2.75	3.50
6 lines	1.50	2.40	3.30	4.20
7 lines	1.75	2.80	3.85	4.90
8 lines	2.00	3.20	4.40	5.60
9 lines	2.25	3.60	4.95	6.30
10 lines	2.50	4.00	5.50	7.00

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WANTED—An issue of securities to float in the East by reliable concern on commission. Address Brokers, U. S. Realty Bldg., Suite 512, New York.

COMMON LAW COMPANIES — Organize under Declaration of Trust; many advantages; legal everywhere; managed by trustees; limited liability. No State organization fees, reports or franchise tax. Meet or do business anywhere. Better than a corporation or partnership. Booklet free. Modern Organization Co., 304 South Broadway, Los Angeles, Calif.

CAPITAL RAISING — Compaigns planned, written, printed — everything complete ready to mail to investors. Twenty years' experience handling investment advertising. Clients all over America. Big, illustrated book, "How to Raise Capital" free if you submit detailed outline of your proposition. Ernest F. Gardner, L-511 Ridge Arcade, Kansas City, Mo.

BUSINESS OPPORTUNITY

Christmas is coming. You will want to give a present to your friend; a gift that will help him in his desire for advancement; a gift worthy of his intelligence.

The Oil and Gas Journal will make an excellent gift. It will help your friend and throughout the year it will be a reminder of your friendship.

Send your friend's name and complete address with your remittance to us and The Oil and Gas Journal will be mailed to him every week.

We will advise him of your kindness.

A BEAUTIFUL summer resort or all-year-round home; splendid new 6-room bungalow in picturesque Ozark setting, among grand oaks and large, clear springs; on a 147-acre paying farm, five fine springs; large fish pond site and many other attractions; on main highway. Robinson Realty Co., 307 Frisco Bldg., Joplin, Mo.

INTERNATIONAL financing; want right now high-grade bond or stock issue. Box 471, Oklahoma City, Okla.

COMPOUNDER and lubricating engineer desires to interest reliable parties in a compounding department for lubricants and New Colloidal greases. If necessary will furnish part of money for equipment, providing parties can show sales capacity for these products. Address Box A-2, care The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED

GEOLOGICAL ENGINEER, 12 years' experience examinations, reports, appraisals, management, oil properties, seeks a new engagement or proposition either with an oil company or with a banking or brokerage house interested in financing or specializing in oil. Principals only. Write Box A-12, The Oil and Gas Journal, Tulsa, Okla.

TECHNICAL graduate and experienced, wishes position as geologist or on instrument. Address Box A-10, care The Oil and Gas Journal, Tulsa, Okla.

WOULD LIKE interview with oil company who could use high-class salesman or sales manager, one with exceptional experience which would meet your most exacting requirements in every respect. Address Box A-1, care The Oil and Gas Journal, Tulsa, Okla.

HIGH-CLASS man, experienced officer and department head, qualified in all lines of production office work; expert accountant and organizer; pleasing personality, with ability to meet the demands of the position, familiar with all Mid-Continent fields, wishes to make new connection by January 1. Address Box 902, The Oil and Gas Journal, Tulsa, Okla.

PIPE LINE superintendent, a man who has had several years' experience on both main lines and gathering systems, would like to connect with company that appreciates ability to handle both the office and field. Thoroughly understand tank building, construction operation and maintenance of pump stations and main lines. Can install over and short system that is leader of such systems. If you are in need of a good man for a responsible position, would like to exchange references. Am now employed but will be open for position about first of the year. Address G, 509 W Hilsboro St., El Dorado, Ark.

WANTED — Every reader of the Classified Section to forget the setbacks and trials of the past year and think of the big year ahead so that they may really enjoy

A Merry Christmas

Classified Wants Department

POSITION WANTED

SUPERINTENDENT of tools and production and expert fisherman, desires connection with reliable oil company; years of practical experience. Can go anywhere. Box 110, The Oil and Gas Journal, Tulsa, Okla.

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The Journal has a wide circulation, going to all the oil fields, refineries, pipe line stations, gasoline plants, supply houses and business offices. It thoroughly covers the industry.

REFINERY Superintendent wishes position; 20 years' experience; have built two refineries. Address R. C., care The Oil and Gas Journal, Tulsa, Okla.

PRACTICAL oil man desires employment who has had success drilling, increasing old production, eliminating water, economy in operating expenses. Reference. Address Box A-11, care The Oil and Gas Journal, Tulsa, Okla.

CARBON BLACK superintendent desires connection with responsible party West. Experienced in construction plants and producing different grades of black. At present in charge of operation East. High-class references. Address Box A-3, care The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—PETS

FOR SALE — Well-broke pedigreed pointer and setter bitch do it all, $125 each. Close bred Ch. Manitoba Rags; dog pups, 7 months, just started, all papers, $35. W. L. Kilpatrick, Bartlett, Tenn.

PURE WHITE Collie pups. An ideal Christmas gift. Papers with each pup. Address Louise Spohrer, Box 255, Nevada, Mo.

LETTERHEADS—PRINTING

OIL FIELD LEGAL BLANKS—Leases, assignments, releases, township plats, gauge books, run tickets, time books, well records, etc. Request on your letterhead gets free catalogue. Olds Press, 215 East Third St., Tulsa, Okla.

NORTH TEXAS MARKET GASOLINE VERY FIRM

FORT WORTH, Tex., Dec. 18.—The North Texas New Navy gasoline market is very firm at 7 cents, and while few sales seem to have been made at this figure so far, inquiries fail to develop any lower prices. Practically all the plants are fairly well sold up until the first of the year, stocks are comparatively low, and with the supply of New Navy somewhat below normal, present indications are New Navy gasoline prices in North Texas will continue firm over the balance of the year.

The 64 and 66 gravities of gasoline are scarce at 9¼ cents, most plants making these grades having sufficient orders on their books to take care of them until after the first of the year and very little can be had even at the advanced price.

Kerosene demand is not quite so brisk and is comparaitvely easily available at 4½ cents, with some asking 4¾. Some increase in stocks is reported.

The natural gasoline market has shown considerable improvement in the past three or four days, Grale A being quoted generally at 6 cents. Most plants who had distress stocks have got out from under on the advancing market and the beginning of the week found very little surplus stocks.

Gas oil in sympathy with fuel oil is stronger at 2½ cents, with the general demand somewhat improved. Very little is now being manufactured in North Texas due to the better prices for kerosene.

The fuel oil market continues to improve, quotations generally being firm at 80 cents. Stocks are normal and while some refiners are still filling contracts made some time ago at the lower levels, there is a healthy tone to the fuel oil market. A few railroad inquiries were in evidence last week although no sales of consequence were reported.

The refineries in North Texas will go into the New Year with smaller stocks of all grades of material on hand than in several years, and will be in a better strategic position to take advantage of any increases in prices than for several years past.

POWELL-LUFKIN LINE

HOUSTON, Tex., Dec. 17.—The Gulf Pipe Line Co. has completed laying its 6-inch pipe line from the Powell Field to Lufkin, Tex., a distance of 101 miles. The line will be in operation by January 15. At Lufkin the line connects with the company's trunk lines from Oklahoma and North Central Texas and also from north Louisiana, which converge there and extend to the refinery at Port Arthur.

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Pure Spring Water
Distilled
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Place your order for Ice with the
TULSA ICE CO.
Phone 12, 4 N. Detroit, Tulsa, Okla.

BALDWIN

HEAVY DUTY STEEL ROLLER CHAIN

Built in Cotter Pin (detachable) type if desired

FOR MORE THAN 27 YEARS Baldwin has built **quality—strength—service—** into Steel Roller Chains. In fact, the history of Baldwin is the history of the Roller Chain Industry.

Particularly Adapted to Oil Well Use —Built with flat or straight side plates, thus eliminating danger of stretching, and the resulting loss of production due to repairs, this STURDY BALDWIN CHAIN is daily proving its worth in the oil fields. *Our Engineering Department is at your service.*

BALDWIN CHAIN & MANUFACTURING COMPANY

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TANKS { Oil, Gasoline and Chemical Storage Capacities 4,400 to 20,000 Gallons
High and Low Pressure Accumulator
Bolted 100 to 2,000 Barrels
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456,000 ft. lbs. stronger than the type sill in general use, and constructed materially lighter. Patented and used only in "Pennsylvania" Tank Cars.

THE PENNSYLVANIA TANK CAR COMPANY
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Pennsylvania Tank Line
(Lessors of Tank Cars)

Sharon, Pennsylvania

New York St. Louis Kansas City Tulsa Houston
San Francisco Beaumont Casper

OKLAHOMA FIELDS

(Continued from Page 138)

Gypsy Oil Co.	6	2,760
Laurel Oil & Gas Co.	1	27
Phillips Pet. Co.	9	5,687
Mid-Kansas Oil & Gas Co.	4	2,500
Pure Oil Co.	1	433
Roxana Pet. Corp.	1	668
Dye, Thomalson et al	5	560
Shelly Oil Co. and Phillips Pet. Co.	12	1,445
Sinclair Oil & Gas Co.	1	125
The Texas Co.	1	1,165
Twin State Oil Co.	5	1,774
Total	60	25,880
Total Burbank	1,113	76,423
Total last week	1,113	78,881
Difference	None	2,458

The daily average line runs from the field during the week were as follows: Gulf Pipe Line Co., 15,401 bbls.; Cosden Pipe Line Co., 7,012 bbls.; Kay County Gas Co., 6,144 bbls.; Osage Pipe Line Co., 1,796 bbls.; Oklahoma Pipe Line Co., 12,040 bbls.; Prairie Pipe Line Co., 6,296 bbls.; Sinclair Pipe Line Co., 3,178 bbls.; Moore Refining Co., 1,991 bbls.; Empire Pipe Line Co., 505 bbls.; and the Ozark Pipe Line Co., 2,510 bbls.

Oil run to storage was as follows: Standish Pipe Line Co., 11,152 bbls.; Mid-Kansas Oil & Gas Co., 4,202 bbls.; Dye-Thomalson and others, 360 bbls.; Twin State Oil Co., 1,310 bbls.; George S. Bole, 582 bbls.; and Sinclair Oil & Gas Co., 1,944 bbls. Total pipe line runs amounted to 56,873 bbls., and total storage, 19,550 bbls.

Tonkawa Production

Tonkawa daily average production for the week ended December 12 follows:

Company—	Wells	Bbls.
Amerada Petroleum Corp.	35	2,374
Blackwell Oil & Gas Co.	30	1,832
Carter Oil Co.	6	230
Champlin Refining Co.	3	56
Champlin Ref. Co. and Twin State Oil Co.	1	8
Comar Oil Co.	276	19,289
Cosden Oil & Gas Co. and Marland Refining Co.	14	542
Gypsy Oil Co.	82	8,833
Healdton Oil & Gas Co.	19	2,122
McCaskey & Wentz	43	2,147
McMan Oil Co.	2	30
Pennok Oil Co.	26	1,690
Phillips Petroleum Co.	4	518
Prairie Oil & Gas Co.	11	906
Sinclair Oil & Gas Co.	1	16
Slick & Comar Oil Co.	31	2,967
Southwestern Pet. Co.	14	877
The Texas Co.	4	60
White Eagle Oil & Ref. Co.	7	649
Total	609	47,146
Total last week	603	48,346
Difference	6	1,200

Daily average runs by the various pipe line companies in the Tonkawa Field were as follows: Kay County Gas Co., 22,212 bbls.; Ozark Pipe Line Co., 10,121 bbls.; Gulf Pipe Line Co., 8,273 bbls.; Empire Pipe Line Co., 560 bbls.; Champlin Refining Co., 1,083 bbls.; Prairie Pipe Line Co., 906 bbls.; Enid Oil & Pipe Line Co., 294 bbls.; Oklahoma Pipe Line Co., 230 bbls.; Bolene Refining Co., 2,380 bbls., making a total of 46,068 bbls.

McCaskey & Wentz ran 1,010 bbls. to storage during the week and 68 bbls. more was run to lease storage in the field.

Tulsa County

In Tulsa County, four wells were abandoned as dry during the week. They were the Mid-Co Petroleum Co.'s No. 16 Tiblow, C NW NW, Section 9-21-13, at 1,460 feet; the U. S. Oil & Gas Co.'s No. 10 Charley, CSL SW SW, Section 9-21-13, at 1,410 feet; W. E. Halsell's No. 2 Thompson, C NW, Section 35-21-13, at 1,890 feet; and Halsen & Sons' No. 1-A Thompson, CNL NE NW NE, Section 34-21-13, at 1,910 feet.

Obens & Weber abandoned the location for their No. 2 Bunger, CSL SE SW, Section 12-18-12. Webster and others abandoned as dry at 1,127 feet their No. 3 Grant, CWL NE NW, Section 25-19-14, and the Noble Oil & Gas Co. and others' No. 1 Steel, SW cor. NW NE, Section 20-17-14, was also dry at 1,952 feet.

In Garfield County, the Rabbits Foot Oil Co. abandoned its No. 3 Farrill, C NW SE SW, Section 9-21-3w.

Northwest of Duncan, in Stephens County, the C. & O. Drilling Co. had a 9,000,000-foot gas flow in its No. 2 Ridge, SW cor. NW NW, Section 30-1n-8w, sand being found at 2,251-55 feet. It was an old well.

In Garvin County, the Texas-Pacific Coal & Oil Co. was swabbing 160 bbls. from the pay sand at 1,552-64 feet in its No. 2 Cosden, C NE SE SE, Section 8-1n-3w. The Magnolia Petroleum Co.'s No. 3 Mauldin "A" NE cor. SE, Section 16-1n-3w, was flowing 300 bbls. of 23 gravity oil from sand at 1,865-68 feet.

In the Burbank

In the Burbank, the Mid-Kansas Oil & Gas Co. had a show of gas at 2,933 feet on top of the sand, and a show of oil at 2,938 feet in its No. 12, C SE NW SE, Section 35-27-5, and was shut down, moving in company tools. The Sinclair Oil & Gas Co.'s No. 14, CEL SE NE NE, Section 19-27-6, was abandoned as dry at 2,958 feet.

Northeast of Duncan, in Stephens County, Kilgore and others shut down their No. 4 Simpson, in the NW SE NE, Section 11-1n-5w, at 1,072 feet, with a hole full of oil.

In Grady County, the Magnolia Petroleum Co. was running the 6-inch to test sand uncovered at 3,036-39 feet in its No. 1 Williams, C NE NW SW, Section 11-4n-8w.

In Kiowa County, the Kiowa Petroleum Co.'s No. 2 School Land, in the NW NW NE, Section 33-6n-20w, ran into granite at 960 feet and was shut down.

Southern Beckham County had a test below the 3,000-foot level. It was Sutherland and others' No. 1 Graves, SW NE NW, Section 8-8n-26w, which was drilling at 3,175 feet. South of Sayre, the Foster Dil Co. shut down its No. 1 Martin, in the NE NE NW, Section 33-9-23w, and will abandon it. The Beckham Oil & Development Co. lost the tools at 3,107 feet in its No. 1 Jergensen, SE SW NW, Section 35-9-23w. The Magnolia Petroleum Co. was underreaming the 5-inch at 3,680 feet in its No. 1 Ezzell, NE cor. Section 36-9-23w. Shipp-Nash and others were drilling at 3,500 feet in their No. 1 Githers, in the SW SW NW, Section 14-9-26w.

The Humble Oil & Refining Co. was also at the 3,000-foot level in its No. 1 Bowman, in the SE NE SW, Section 22-6s-4e, in Jefferson County.

BIG EQUIPMENT ORDER IS PLACED BY MIDWEST

One of the best evidences of returning prosperity to the petroleum industry was the placing during the past week by the Midwest Refining Co. of Casper, Wyo., of an order for 160 derricks, 160 rig irons and 160 bull wheels. The order is one of the largest announced by the supply and equipment trade in recent months and indicates what the Midwest thinks of the prospects for 1924.

The Tulsa Rig, Reel & Manufacturing Co. obtained a large part of the order, being asked to furnish 60 steel pumping derricks and 50 drilling rigs. Walter Estes, of the company, went to Casper and closed the order. This equipment is to be used in the Salt Creek Field. The Lee C. Moore & Co., Inc., was given an order for all the bull wheels and 50 of the drilling derricks and the National Supply Co. for all the rig irons.

FLOOD IN POWELL FIELD SHUTS DOWN ALL WORK

CORSICANA, Tex., Dec. 19.—The production of the Powell Field on Tuesday, December 18, was down to 85,225 barrels. The four-day rain of last week shut down all operations in the field and prevented the work of making pumping connections with many wells that had quit flowing. This is one reason why the production has fallen so low.

One Sinclair Pipe Line Co. employe was drowned when a boat in which he and three other employes were navigating the flood water overturned. The three others caught hold of tree branches and were later rescued.

YOU CAN DEPEND ON GENUINE "TOLEDOS"

"TOLEDO"

No matter how hard the work may be, or how severe the working conditions, genuine "Toledo" tools can be counted on always to render the same dependable service you have learned to expect from them.

Genuine "Toledo" tools have no equal. Simple in construction, with no complicated parts to clog with dirt or get out of adjustment, they are durable. Light, compact and portable they may easily be taken to the job anywhere and operated. They are tools of no regrets. When ordering look for the name and trade-mark, above, and accept no substitutes. Only GENUINE "TOLEDOS" will give you "Toledo" service.

This is the "Toledo" No. 2 tool. It threads 2½" to 4" pipe, is light, compact and, as shown in the illustration, threads pipe anywhere.

THE TOLEDO PIPE THREADING MACHINE CO.
Toledo, Ohio
New York Office: 50 Church St.

READING CAST STEEL GATE VALVES

Reading Cast Steel Gate Valves are built for high temperature work, particularly. The flexible construction and suspension of the disc and the method of setting in and backing up the seat ring provide for keeping the valve tight when expansion begins.

The steeel you are familiar with in Reading Fittings.

READING STEEL CASTING CO., Inc.
Reading Valve and Fittings Division
General Sales Office: Bridgeport, Conn.

Stocked by: Norvell-Wilder Hardware Company, Beaumont, Houston, Mildred and Shreveport

Grinnell Co. of the Pacific, Los Angeles, Cal.

Write for Catalog Part 1700

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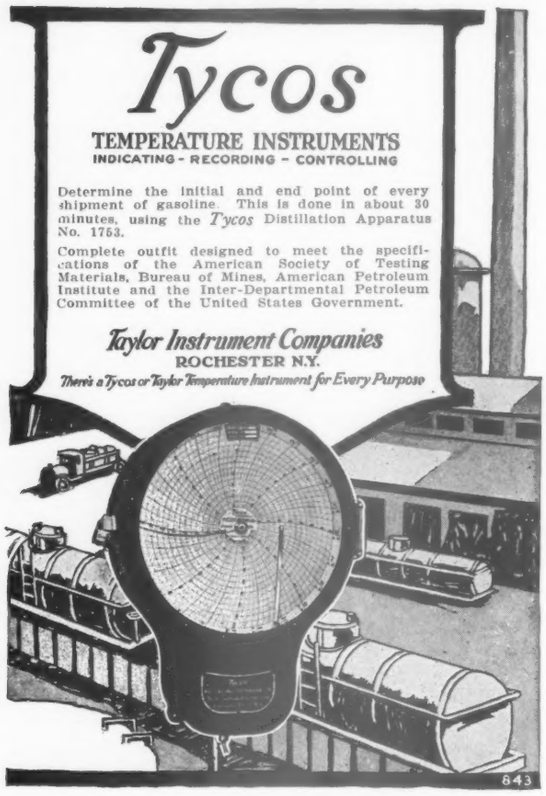
INDICATING - RECORDING - CONTROLLING

Determine the initial and end point of every shipment of gasoline. This is done in about 30 minutes, using the *Tycos* Distillation Apparatus No. 1753.

Complete outfit designed to meet the specifications of the American Society of Testing Materials, Bureau of Mines, American Petroleum Institute and the Inter-Departmental Petroleum Committee of the United States Government.

Taylor Instrument Companies
ROCHESTER N.Y.
There's a Tycos or Taylor Temperature Instrument for Every Purpose



It gives full details.

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Freight and hauling are big factors in drilling cost.

In putting drill outfits in foreign fields, ocean rates mount fast, and hauling heavy supplies to wildnerness camps often causes serious delay.

Peons carrying parts of a diamond drill, Mexico

SULLIVAN DIAMOND DRILLS

are the most compact and the lightest oil drilling rigs you can select. They don't use large, heavy casing, even on deep holes. An outfit for 2500 to 3000 feet will weigh only 20 to 30 tons, in small units, as compared with 60 to 125 tons for other types of drills.

The diamond drills themselves may be sectionalized, if desired.

Sullivan Diamond Drills are not only the cheapest to put on the ground, but the cheapest to operate. The cores which they secure furnish precise, complete knowledge of oil deposits which is invaluable for geologist, producer and investor.

Ask for Bulletin 1580-O.

SULLIVAN MACHINERY COMPANY
(Diamond Drill Builders Since 1875)
88 East Adams St., Chicago

COMMITTEES REPORT ON STANDARDIZATION

(Continued from Page 21)

that will give the greatest service to the operator, and standardization of the tool joint can be completed. The size of the hole can then be determined as it is largely dependent on the taper of the thread adopted. Standardization of the threads now in use of all types is practically complete so far as to the number of threads to the inch. The universal practice is to have four threads to the inch on all sizes larger than 4-inch, and five threads on 4-inch and all smaller sizes.

We have adopted outside diameters and lengths for all sizes, and the size of hole in a few of the sizes as follows:

Six-inch joints, diameter 7¾ inches, length 24 inches, diameter hole 3½.

Five-inch joints, diameter 6⅝ inches, length 22 inches, no agreement on diameter hole.

Four-inch joints, diameter 5½ inches, length 20 inches, no agreement on diameter of hole for California, 4½ inches for Mid-Continent.

Three and one-half-inch joints, new size and no dimensions adopted as it is not now in use.

Three-inch joints, diameter 4½ inches, length 18 inches, no agreement on diameter hole.

Two and one-half-inch joints, diameter 3¾ inches, length 18 inches, no agreement on diameter hole.

Two-inch joints, diameter 3¼ inches, length 18 inches, no agreement on diameter hole.

We have no recommendations as to quality of material or method of heat treating; this is a manufacturer's problem, best worked out by individual efforts.

Boiler Code

The committee on boiler code naturally gave due consideration to the A. S. M. E. boiler code. The following replied to inquiries on the adoption of a boiler code:

L. C. ———, Standard Oil Co. of California; W. B. Blodget, Chanslor-Canfield Midway Oil Co.; W. V. Bowles, The Texas Co.; Chester W. Brown, Union Oil Co. of California; J. J. Conry, the Carter Oil Co.; T. J. Crumpton, Petroleum Midway Co.; W. W. Fondren, Humble Oil & Refining Co.; E. J. Gorman, the Twin State Oil Co.; R. A. Griffith, Sinclair Oil & Gas Co.; R. D. Gwynne, Gypsy Oil Co.; F. F. Hill, Union Oil Co.; G. A. Howk, General Petroleum Corp.; William Keck, contractor; L. J. King, Associated Oil Co.; W. L. McLaine, General Petroleum Corp.; J. Edgar Pew, Sun Oil Co.; A. H. Riney, Phillips Petroleum Co.; E. H. Salrin, Tidal Oil Co.; C. C. Scharpenberg, Standard Oil Co.; George Stoddard; John R. Suman, Rio Bravo Oil Co.; J. H. Tucker, Gulf Production Co.

These replies indicated that while a great many are in favor of the adoption of the A. S. M. E. code, there are some who do not favor its adoption as a whole, exception being taken in particular to paragraphs 291, 296, 309, 310 and 409.

The following suggestions are offered: Boiler of practically the same horse power should have the same size steam connections, boiler feed, blowoff, gage cock, water gage connections, the same size bonnet, the same number and size of hand holes and also a standard sized manhole if used. Center of steam domes located the same distance from front end of boiler, and the distance to top of dome from bottom of fire box to be the same.

Chairman Steen personally suggested that the committee be continued to carry on further work on boiler code and that standard boilers be taken up, the suggestions for standard boilers to be duly considered.

Pipe Standards

The committee on standardization of specifications for steel and iron pipe for oil country tubular goods, J. Edgar Pew, chairman, reported:

We must have new sizes of casing. These are necessary both as to weights and diameters for the deeper drilling. In making the new sizes we must have a better standardization of material, in size, in thread, in tapers of joints, etc. In our specification we call particular attention to the provision for standard of gauges for use in all the mills and for their checking requiring the maintaining of the standard.

We are endeavoring to specify a better quality of the material that goes into the pipe, and a better workmanship in its manufacture, for better and more efficient inspection regulation and requirements. One per cent of bad pipe might easily cause the loss not only of an otherwise entirely good string of casing or drill pipe, but the loss of an almost completely drilled hole. Such losses mount up in some cases to as high as $50,000 and more. There may also be an additional loss of oil production on account of the delay.

Your committee urges a permanent committee on pipe standardization and specifications and that the A. S. T. M. be requested to appoint a committee to cooperate with this committee, this joint committee to be a committee of this institute, as more closely in touch with requirements, and should have one or more members from each of the producing areas and be organized with sub-committees in the separate districts.

Your committee further suggests the employment of a competent engineer, familiar with oil field engineers, oil field conditions and requirements to have general charge of the entire standardization program and to advise with the committee having in charge the various branches of the standardization work.

Rope and Cables

The conference report on standardization of wire rope and manila cables reported its unanimous suggestion that the institute appoint a permanent committee to carry on the standardization program on wire rope for drilling purposes to consist of the following members, with Harry J. Leschen as chairman:

George S. Whyte, president, Macwhyte Co.; John K. Broderick, president, Broderick & Bascom Rope Co.; C. C. Sunderland, sales engineer, John A. Roebling's Sons Co.; C. S. Knight, Jr., sales manager, American Steel & Wire Co.; Harry J. Leschen, president, A. Leschen & Sons Rope Co.

It was the opinion of J. S. McDaniel, secretary of the Cordage Institute, that his members will cooperate to the fullest extent.

Derricks

The conference report on standardization size for derricks reported that in as much as only the four representatives were present it would not be in order to make any definite recommendations regarding the standardization of steel derricks. Those present were in favor of standardization and as there is no committee on the standardization of steel derricks, suggested the institute appoint a committee to investigate this subject. The report was signed by Patrick York, Yorke Derrick Co., Washington, Pa.; E. B. Smith, Marion Machine Foundry & Supply Co., Marion, Ind.; James A. Thomas, Superior Tube Co., Kansas City, Mo.; Richard R. Bloss, International Derrick & Equipment Co., Columbus, Ohio.

MRS. JAMES B. BERRY DIES

OIL CITY, Pa., Dec. 15.—Mrs. James B. Berry, one of the best known residents of this city, died at her home here today. She was the widow of James B. Berry, one of the first oil brokers in the country. The business which her husband founded is now conducted by her two sons under the firm name of the James B. Berry Sons Co. She is survived by two sons: James D. Berry, who is at present sick in a Cleveland hospital, and Charles Berry, and one daughter, Mrs. Howard H. Lowrie, all of this city.

SHIPMENTS OF PETROLEUM FROM MEXICAN PORTS DURING OCTOBER

TAMPICO, Mex., Dec. 15.—Shipments of petroleum from Mexican ports of primary clearance during the month of October totaled 11,593,715 bbls., a decrease from the movement in November, 1922, of say, 638,465 bbls. Of the movement in question, Tampico dispatched 10,560,566 bbls; Port Lobos, 735,781, while Tuxpam was responsible for 297,368 bbls. Of the movement from Tampico, 6,463,200 bbls. can be credited to the heavier oils of the Panuco district.

A feature of the Tuxpam movement was a shipment by Penn Mex Fuel Co. of 150,589 bbls. to Puerto, Mex., for account of the Mexican Eagle Oil Co., Ltd., thus placing Penn Mex Fuel back in the shipping column after an absence of many months.

By classes the oils dispatched in October follow: Crudes, 6,671,799; topped crudes, 3,628,734; distillates, 717,581, while an item of bunker deliveries, added to balance, can be placed at 575,601 bbls.

The movement in detail follows:

FROM TAMPICO

By Huasteca Petroleum Co.
(Mexican Petroleum)

Oct.	Rig	Vessel and Destination—	Bbls.
1	Ss.	J. O. Boyd, New Orleans.	**18,963
1	Ss.	E. L. Doheny, New Orleans	*60,245
3	Ss.	C. A. Canfield, Boston....	*61,238
3	Ss.	Tecumseh, New York	**67,271
4	Ss.	Fueloil, Tampa	*14,207
5	Ss.	Montana, New York	*64,640
5	Ss.	P. H. Harwood, Providence	*64,550
5	Ss.	Gulfcoast, New Orleans...	**51,255
6	Ss.	I. C. White, Brazil	*65,604
6	Ss.	Mexoil, Miami	*14,441
7	Ss.	N. Bridge, Galveston....	*40,733
7	Ss.	G. W. Barnes, Galveston..	*64,457
7	Ss.	Uncas, New York	*41,589
8	Ss.	C. E. Harwood, New Orls.	**30,795
8	Ss.	Meline, New York.....	*63,122
9	Ss.	Mirlo, New York	**78,560
9	Ss.	J. M. Danziger, New York	*2,265
9	Ss.	J. M. Danziger, New York	*61,010
11	Ss.	E. L. Doheny, Boston.....	*61,276
12	Ss.	City of Freeport, N. York	**44,226
13	Ss.	F. Ewing, New York.....	*63,258
14	Ss.	G. W. Barnes, Galveston..	*63,109
14	Ss.	C. Anderson, New Orleans	**79,596
15	Ss.	H. G. Wylie, New York...	*39,373
15	Ss.	Mantilla, Southampton ...	*50,737
16	Ss.	J. O. Boyd, New Orleans..	**19,165
16	Ss.	N. Bridge, Fall River....	*38,845
16	Ss.	Fueloil, Houston	*14,986
17	Ss.	Panoil, Miami	*14,292
19	Ss.	W. L. Steed, Boston.....	*58,513
19	Ss.	E. L. Doheny, Jr., N. York	*71,269
20	Ss.	O. D. Bennett, New Orls.	*45,530
21	Ss.	Invergordon, Southampton.	*56,168
22	Ss.	G. W. Barnes, Brazil.....	*58,132
23	Ss.	C. Anderson, New Orleans.	**79,241
25	Ss.	Inveravon, Southampton..	*55,435
26	Ss.	Inverurie, Liverpool	*56,212
26	Ss.	Mexoil, Miami	*14,586
27	Ss.	P. H. Harwood, Galveston	*66,372
27	Ss.	Massasoit, New York.....	**46,636
28	Ss.	Mendocino, New York ...	*61,909
28	Ss.	Montana, New York	*65,842
28	Ss.	Uncas, New York	*43,243
29	Ss.	C. A. Canfield, Galveston.	*61,330
29	Ss.	Santana, Providence.....	**51,249
30	Ss.	Meline, New York	*63,540
31	Ss.	O. D. Bennett, Tampa ...	*45,136
31	Ss.	Cassimir, New York.....	**47,438
31	Ss.	Nora, Providence	*72,286
		Bunkers deliveries	150,506
		Total	2,624,171

By Transcontinental Petroleum Co.

Oct.	Rig	Vessel and Destination—	Bbls.
1	Ss.	Agwimoon, New York	63,208
1	Ss.	Galena, Baton Rouge....	47,632
2	Brg.	Freeport Sulphur No. 4, Freeport	14,646
3	Brg.	Freeport Sulphur No. 3, Freeport	15,164
3	Ss.	Freeport Sulphur No. 1, Freeport	19,374
3	Ss.	Baytown, Baytown	19,684
3	Ss.	Muskogee, Cuban Ports...	60,851
4	Ss.	Baytown, Baytown	4,017
5	Ss.	S. V. Hunt, New York....	65,695
7	Ss.	Princeton, Baton Rouge...	48,236
8	Ss.	Mary Luckenbach, Fall R.	49,365
8	Ss.	Galena Sulphur No. 1, Freeport	19,545
10	Ss.	Baytown, Baytown	18,363
11	Ss.	Wellington, New Orleans..	26,489
11	Ss.	Baytown, Baytown	3,913
11	Ss.	M. F. Elliot, Baton Rouge	59,841
12	Ss.	Baton Rouge, Baton Rge.	47,999
13	Ss.	Geo. H. Jones, New York..	46,406
14	Ss.	S. V. Harkness, N. York..	59,199
14	Ss.	Geo. H. Jones, New York.	16,276
14	Ss.	Galena, Baton Rouge.....	47,965
14	Ss.	Swiftscout, New York.....	50,001
15	Ss.	San Tirso, Baltimore	50,579
15	Ss.	Vaarli, Baltimore	38,122
16	Ss.	A. C. Bedford, Panama ..	*81,460
16	Ss.	Vaarli, Baltimore	17,329
17	Ss.	Swiftscout, New York....	22,931
17	Ss.	San Rosendo, Antwerp....	27,079
18	Ss.	Eugene V. R. Thayer, Philadelphia	63,339
18	Ss.	Republic, Key West.....	40,588
20	Ss.	Dunganaon, New York ...	63,191
21	Ss.	Catahoula, Philadelphia. .	25,999
22	Ss.	Catahoula, Philadelphia .	19,435
22	Ss.	Caloria, La Ceiba S. A....	33,744
23	Ss.	Galena, Jacksonville	43,171
24	Ss.	Scottish Borderer, N. York	37,889
25	Ss.	Scottish Borderer, N. York	19,866
26	Ss.	Freeport Sulphur No. 1, Freeport	18,558
26	Ss.	Beaconoil, Boston	64,162
28	Ss.	Wellington, Chaparra, Cu.	25,057
29	Ss.	Cassimir, New York.....	3,174
29	Ss.	Baytown, Baytown	18,912
30	Ss.	Baytown, Baytown	4,008
30	Ss.	Princeton, Havana	30,264
31	Ss.	Princeton, Havana	15,719
		Bunkers deliveries	46,245
		Total	1,614,735

By Cia Mexicana Holandesa La Carona S. A.

Oct.	Rig	Vessel and Destination—	Bbls.
3	Ss.	Zoppot, U. S. A.	83,516
4	Brg.	Monogahela, Galveston ..	16,813
4	Brg.	Conemaugh, Galveston ...	15,696
4	Ss.	Cardium, U. S. A.	53,760
5	Ss.	H. D. de Meurthe, U. S. A.	50,028
6	Ss.	Newona, U. S. A.	21,854
6	Ss	Malmanger, London	58,111
6	Ss.	Davanger, U. S. A.	61,886
8	Ss.	S. L. Fuller, Philadelphia.	64,495
10	Ss.	Golaa, U. S. A.	57,339
11	Ss.	Gulf Trade, U. S. A.....	68,991
13	Ss.	Trinidadian, U. S. A.....	23,171
14	Ss.	Scot Borderer, New Orls..	58,972
14	Ss.	Cardium, New Orleans....	51,848
16	Ss.	Henry Deutsch, Europe ..	46,222
20	Ss.	Cliona, Europe	49,377
22	Ss.	Mytulus, Europe	**44,836
24	Brg.	Monogahela, Port Arthur.	17,491
24	Ss.	Gulftrade, Port Arthur ..	69,931
24	Brg.	Conemaugh, Port Arthur.	15,578
24	Ss.	Cepolis, U. S. A.....	51,672
25	Ss.	Ligonier, Port Arthur ..	30,114
25	Ss.	El Oso, U. S. A.	63,075
26	Ss.	Texas, U. S. A.	58,476
31	Ss.	Grenatula, Europe	*50,758
		Coastwise deliveries	69,662
		Coastwise deliveries	102,115
		Bunkers deliveries	78,425
		Total	1,434,212

By Mexican Eagle Oil Co., Ltd.

Oct.	Rig	Vessel and Destination—	Bbls.
3	Ss.	San Zeferino, Buenos Aires	*50,484
4	Ss.	Conus, Gibraltar f/o	*51,067
4	Ss.	Leise Maersk, S. A. Ports.	**13,315
6	Ss.	San Florentino, S. A. Ports	*87,225
6	Ss.	Recco, Savona, Italy.....	*37,113
6	Ss.	War Mehtar, Devonport ..	*50,775
6	Ss.	San Ubaldo, Lizard Point f/o	**36,407
8	Ss.	San Ricardo, Buenos Aires	*49,593
9	Ss.	San Lamberto, Lizard Point f/o	*50,681
10	Ss.	San Roberto, Philadelphia	*50,701
15	Ss.	San Teodoro, Lizard Point f/o	*55,002
15	Ss.	San Lorenzo, S. A. Ports..	*80,432
16	Ss.	Camden, Cuba	*57,724
17	St.	Cardita, Montreal	*49,411
18	Ss.	San Leon, Habana	*64,840
19	Ss.	San Rosendo, London	*17,986
20	Ss.	Clearpter, Buenos Aires ..	*67,405
21	Ss.	Artemisea, Brazil Ports...	*15,332
23	Ss.	Borgestad, New York	*36,624
23	Ss.	Mytulus, Lands End, f/o.	*18,810
24	Ss.	San Felix, S. A. Ports....	*87,460
25	Ss.	San Macedonio, Lizard Point f/o	*44,397
25	Ss.	Rosario, Vado Ligure, It.	*46,490
30	Ss.	San Leon, Devonport	*54,275
		Coastwise deliveries	*87,744
		Bunkers deliveries	146,742
		Total	1,388,045

By Freeport & Mexican Fuel Oil Corp.
(Sinclair Interest)

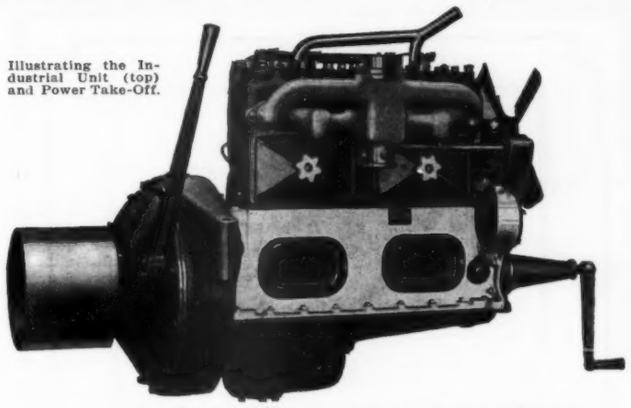
Oct.	Rig	Vessel and Destination—	Bbls.
3	Ss.	Albert E. Watts, New Orl.	67,116
3	Ss.	Madrono, Cuba	55,517
5	Ss.	E. W. Sinclair, Cuba	45,011
8	Ss.	Gene Crawley, Cuba	30,915
11	Ss.	Swiftarrow, Fall River ...	75,234
12	Ss.	W. L. Connelly, Cuba	32,218
13	Ss.	Panuco, Pt. Barrios, C. A.	21,969
14	Ss.	Albert E. Watts, N. York	64,911
16	Ss.	Madrono, Cuba	54,542
16	Ss.	Freeport Sulphur No. 6, Freeport	26,242
17	Ss.	J. Fletcher Farrel, Cuba..	65,180
19	Ss.	E. W. Sinclair, Jacksonville	43,674
21	Ss.	Mirita, New Orleans	54,836
21	Ss.	Swiftlight, Fall River	74,876
21	Ss.	Joseph M. Cudahy, Cuba..	67,432
22	Ss.	Freeport Sulphur No. 6, Freeport	27,014
25	Ss.	Virginia, New York	61,676
27	Ss.	W. L. Connelly, Cuba	31,795
27	Ss.	Madrono, Houston	56,295
28	Ss.	Samuel L. Fuller, Phila...	68,628
29	Ss.	Gene Crawley, Pt. Limon, C. A.	32,162
29	Ss.	J. Fletcher, New Orleans..	67,345
30	Ss.	Aztec, New York	50,099
31	Ss.	Panuco, New Orleans	25,044
31	Ss.	Mirita, Cuba	56,085
		Coastwise deliveries	34,617
		Bunker deliveries	8,951
		Total	1,299,396

By Mexican Gulf Oil Co.

Oct.	Rig	Vessel and Destination—	Bbls.
2	Ss.	Carrier, Port Arthur	47,378
3	Ss.	Winifred, Houston	19,051
4	Ss.	Gulfpoint, Houston	68,027
8	Ss.	Gulfoil, Galveston	47,789
9	Ss.	Ligonier, Savannah	30,092
12	Ss.	Gulfpoint, Savannah	66,290
13	Ss.	Winifred, Houston	19,007
20	Ss.	Gulfstar, Houston	72,945
22	Ss.	Winifred, Houston	18,585
25	Ss.	Trinidadian, Houston	24,529
27	Ss.	Gulfstar, Houston	74,859
28	Ss.	Carrier, Houston	43,325
		Bunker deliveries	19,558
		Total	551,435

By East Coast Oil Co.

Oct.	Rig	Vessel and Destination—	Bbls.
5	Ss.	Sulphur No 6, Freeport..	30,438
7	Ss.	Tamiahua, Galveston	84,455
10	Ss.	Topila, Galveston	49,564



Illustrating the Industrial Unit (top) and Power Take-Off.

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Pumps and drilling machinery, operated by the Waukesha Industrial Unit, continuously deliver their full capacity. Waukesha, built for work, enables you to maintain this new efficiency and at a consistently low operating cost. Its power is capable and dependable at all times—under ordinary conditions, in emergencies. Its long-period, economical performance is assured by a manufacturing skill, seasoned through long years' experience building America's finest "heavy duty" motors.

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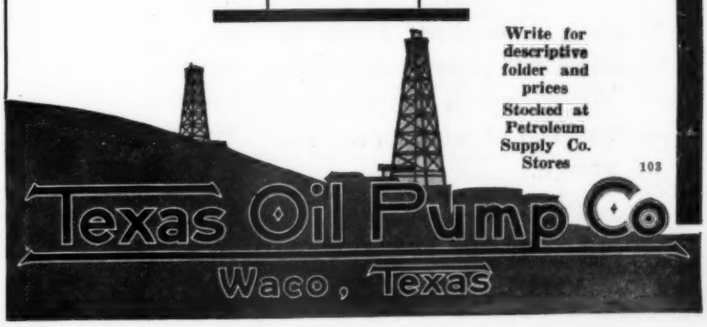
A Standard of Comparison in Pumping Equipment

Economy is becoming a watch word in the oil fields and equipment that is sold today must not only be standard in quality and efficiency but must show that it is a good investment.

Cross section of ROARK Standing Valve

The large number of prominent oil producers who have specified Roark valves in their pumping equipment proves that they are recognized as a standard and with their large capacity, long life and small maintenance cost they are certainly a good investment.



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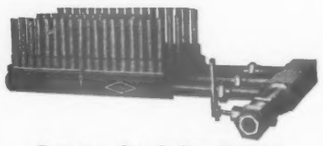
PARKERSBURG MACHINE CO.
PARKERSBURG, W. VA., U.S.A.

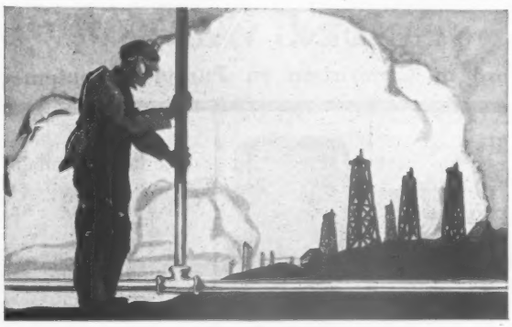


Parmaco Gas Boiler Burners
Low Pressure

Conserve!

Parmaco Burners save more than their cost on the first well

The Parkersburg Machine Co.
PARKERSBURG, WEST VIRGINIA.



In the field, on the line, at the refinery — wherever pipe needs are to be met, Wheeling Pipe is meeting them. Specify Wheeling, it is strong, uniform and true to gauge.

Rotary Pipe
Drive Pipe
Drill Pipe
Line Pipe
Standard Pipe
Tubing and Casing

WHEELING STEEL CORPORATION
WHEELING, W. VA.

10	Ss.	Sulphur No. 6, Freeport..	30,602
15	Ss.	Sulphur No. 1, Freeport..	18,536
17	Ss.	Torres, Galveston	49,889
19	Ss.	Topila, Galveston	50,489
23	Ss.	Torres, Galveston	50,494
26	Ss.	Topila, Galveston	48,705
30	Ss.	Torres, Galveston	51,673
31	Ss.	Sulphur No. 1, Freeport..	18,680
		Bunker deliveries	7,054
		Total	490,579

By The Texas Co. of Mexico S. A.

Oct.	Rig	Vessel and Destination—	Bbls.
1	Ss.	Occidental, Bayonne	*58,223
4	Ss.	Texas, Port Neches	59,092
6	Ss.	Reaper, Norfolk	*57,883
7	Ss.	Virginia, Delaware River.	57,162
19	Ss.	Georgia, Port Neches	45,306
22	Ss.	Louisiana, Galveston	*26,480
22	Ss.	Shenandoah, Bayonne ...	*56,584
24	Ss.	Occidental, Port Neches..	53,622
24	Ss.	Occidental, Port Neches..	**8,628
		Bunkers deliveries	17,379
		Total	440,360

By New England Fuel Oil Co.

1	Ss.	Swift Sure, Fall River...	69,815
7	Ss.	Chuky, Tocopilla	62,018
15	Ss.	Swift Wind, Tocopilla ...	65,887
21	Ss.	Toco, Tocopilla	62,466
24	Ss.	Swift Sure, Fall River ..	69,145
		Bunkeries deliveries	28,978
		Total	358,309

By Empire Oil Gas Co.

4	Ss.	Dora, Philadelphia	49,842
24	Ss.	Dora, Philadephia	49,765
17	Ss.	Aztec, New Orleans	51,541
28	St.	Dannedaike, New Orleans	36,578
		Total	187,726

By Chadick & Co.

3	Ss.	Panuco, New Orleans	20,458
4	Ss.	Mexicano, Texas City	20.225
16	Ss.	Castana, New York	42,936
20	Ss.	Mexicano, Texas City ...	19,919
29	Brg.	G. P. S. 6, Texas City	39,416
		Total	142,954

By U. S. Mex. Oil Corporation

10	Ss.	William Isom. Baltimore..	28,644

FROM PORT LOBOS
By International Petroleum Co.

Oct.	Rig	Vessel and Destination—	Bbls.
1	Ss.	Massacoit, Baltimore	42,113
4	Ss.	Zoppot, New York	20,291
10	Ss.	Masconomo, New York...	45,002
19	Ss.	Calgarolite, Pisagua	76,289
23	Ss.	Montrolite, Piscagua	60,591
26	Ss.	Trentolite, Montreal	64,427
28	Ss.	T. J. Williams, Montreal.	78,439
		Coastwise, Puerto, Mex....	109,632
		Total	496,784

By Cia Petrolera del Agwi S. A.

8	Ss.	Agwimars, Boston	71,383
23	Ss.	Agwiworld, Boston	73,365
		Total	144,748

The Texas Co. of Mexico S. A.

25	Ss.	Reaper, Craney Island, Va.	61,220
29	Ss.	Louisiana, Port Arthur ..	27,984
		Bunkers deliveries	5,045
		Total	94,249

FROM TUXPAM
By Penn Mex Fuel Co.

Oct.		Coastwise deliveries, Minitit-lan	150,589

By Mexican Eagle Oil Co., Ltd.

1	Ss.	Marinula, Lands End f/o.	*6,368
2	Ss.	San Gerardo, Buenos Aires	*16,581
8	Ss.	San Florentino, Buenos Aires	*16,590
15	Ss.	San Lorenzo, Buenos Aires	*15,440
26	Ss.	San Felix, Buenos Aires..	*18,028
		Bunkers deliveries	73,772
		Total	146,779

OCTOBER SUMMARY

From—	
Tampico	10,560,566
Port Lobos	735,781
Tuxpam	297,368
Total October, 1923	11,593,715
Total October, 1922	12,232,180
Decrease October, 1923	638,465

DIVISION OF MOVEMENT

To—	
United States	7,522,593
South America	958,872
United Kingdom	606,354
Cuba	661,682
Mexican Coastwise	554,359
Continent	352,942
Canada	192,277
Panama	81,460
Central America	87,575
Bunkers	575,601
Total	11,593.715

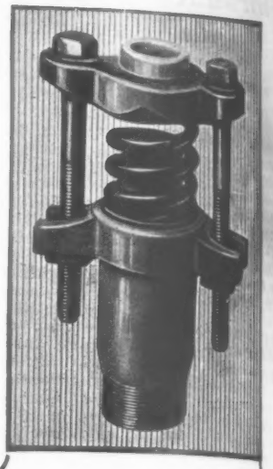
Note: * Denotes Topped Crude; ** Denotes Distillates.

GAS FOR SUMMER OIL FOR WINTER IDEAL HEATING?

(Continued from Page 68)

that the householders may depend upon the oil business to stand behind them as far as future supplies of oil are concerned.

He urged that one of the things to be most carefully considered in what is virtually the beginning of real activity in this new industry is the question of adequate storage. His attention had been



Deep Bowl Holds Plenty of Packing

An unusually large amount of packing is held in the deep bowls found on Nor-Bro Spring Stuffing Boxes.

This packing is always tight and compact, forced against the rods by a powerful, oil-tempered spring. This insures an absolute cleaning of the rods. Oil cannot come through.

Every part is made of malleable iron carefully machined. The tension of the spring is regulated by two convenient screws. Packing can be quickly changed. Rods pull through without removing box.

Get Nor-Bros at your supply house or direct from us.

Manufactured by
NORRIS BROS., Inc.
Manufacturers of Oil Well Pumping Equipment
ROBINSON, ILL.

191
NORRIS

Men!

Protect Yourselves with this Time Punch

Many a faithful employe, conscientiously performing his duties, in connection with heat-treating processes, has had to stand the blame for heavy spoilage, in the past—*simply because he couldn't prove that he was on the job!*

In every manufacturing process calling for temperature control you can now protect yourself against unjust reprimand by means of the TIME PUNCH attachment of the Columbia Recording Thermometer.

The Day and Night Chart furnishes a true record of temperature variations. But the Time Punch, operating exactly like a time clock, registers the very minute of your visit, showing beyond question that you watched the chart at stated intervals. Your employer doesn't have to take your word for it—the little punch hole in the margin of the disc, made at the instant you press the button, backs you up in your assertion that you kept your eye on the temperature. It proves that you were faithful in the discharge of your duties.

As a matter of self-protection urge your Superintendent to install Columbia Recording Thermometers with Time Punch attachment. They cost no more than ordinary recording thermometers without this valuable feature.

The Time Punch attachment is also supplied on Columbia Recording Gauges and Tachometers.

Write today for Catalog H-5

American Schaeffer & Budenberg Corporation
SUCCESSORS TO
Schaeffer & Budenberg Mfg. Co.
American Steam Gauge & Valve

BROOKLYN, N. Y.

Makers of Instruments for the Promotion of Efficiency in Power Plant and Manufacturing Departments

*Boston, Buffalo, *Chicago, Cleveland, Detroit, *Los Angeles, Tulsa, Philadelphia, *Pittsburgh

*Stock carried at these branches.

Exclusive Representatives for Canada: THE CANADIAN FAIRBANKS-MORSE CO., Ltd. Montreal—Toronto

Columbia Recording Thermometers

called recently to a number of instances where oil burner manufacturers were selling apparatus which had arrangements for an oil storage of only 30 or 40 gallons of oil. "This," he said, "is a foolish procedure as it will cause the householder to have smaller volume of deliveries made than if he had a more adequate storage tank on his premises." He urged that both the producers of oil and the manufacturers of burner apparatus sell at the time of the sale of the burner a 1,000 barrel capacity tank. "This," he said, "should be the minimum storage arrangement."

MINE BUREAU EXPERTS FIND NEW GAS ZONE

(Continued from Page 68)

5 feet of the Meekin sand in this well. The salt water is doubtless edgewater in this sand. It is not unlikely that the sand will produce oil at higher positions on the structure. The top of the Primm gas zone and the Meekin sand lie 325 feet and 365 feet respectively below the top of the Nacotoch sand. It has been shown in the report on the eastern part of the Smackover Field that the base of the Nacotoch sand contains water. The drilling to date, however, indicates that no water will be encountered between the Nacotoch sand and the Primm gas zone.

The few wells already drilled to the Primm gas zone have proved this to be a gas horizon of large value which will repay care in drilling so as to exploit it with the minimum amount of waste.

ELABORATELY EXPLAINS CHESTER GRANT RUMOR

NEW YORK, Dec. 16.—According to Henry Woodhouse, of 280 Madison Avenue, the terms of the concessions given by the Turkish Government to the Ottoman-American Development Co. have been misrepresented, with the result that even Turkish officials have been misled by them. Mr. Woodhouse, who was designated as a committee of one by the stockholders to study the terms of the concessions, said that the final terms had not been made public. His statement was made as an answer to rumors that the company was in default.

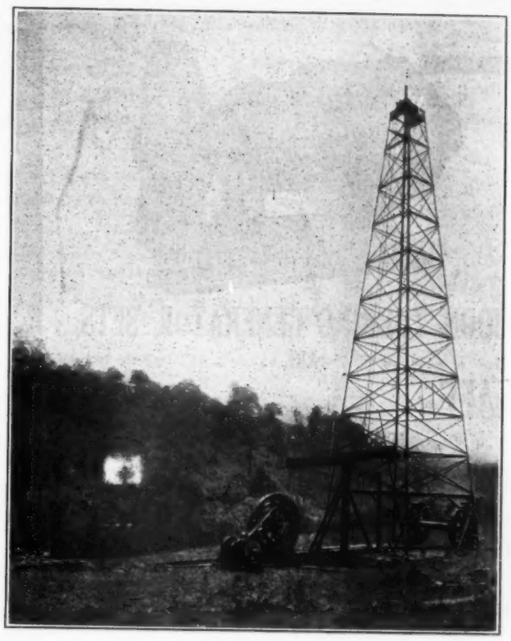
"The mistakes and rumors," said Mr. Woodhouse, "have arisen from the fact that the terms of the concessions are in five separate documents, none of which has been published, and there was a sixth document, a preliminary draft of the terms of the concessions, which was used as a basis for discussion, but the terms were modified radically before they were adopted. Only the sixth document was published and has caused many complications and hardships.

"Under the preliminary draft the company would be compelled to meet certain requirements in six months for one section and two years for another section from the date of ratification of the concessions, while the terms of the final draft as ratified allow the company six months and two years in which to make preliminary surveys and plans before filing a notice of its decision to go ahead or abandon these sections of the concessions. If it is decided to go ahead, the time in which to act begins to count only from the date when the notice to go ahead is filed. If notice of decision to abandon is filed, then the company has no further obligations regarding that particular section and the other sections of the concessions are not affected."

Mr. Woodhouse said there were numerous errors in the published texts of the concessions, and that these were no doubt responsible for the reports that the company had defaulted.

Meanwhile, a Washington dispatch says Great Britain seeks to obtain control of the Mosul oil region by sponsoring the constitution for the Kingdom of Irak which would validate the undertakings of the former Turkish Government, including the oil concessions alleged to have been made to Anglo-French interests.

O'Brien Structural Steel Derricks



Features:

Strength

Ease of erection

Low cost

No upkeep, when put up they stay.

The double splice joint, a patented feature.

Cannot wind or twist.

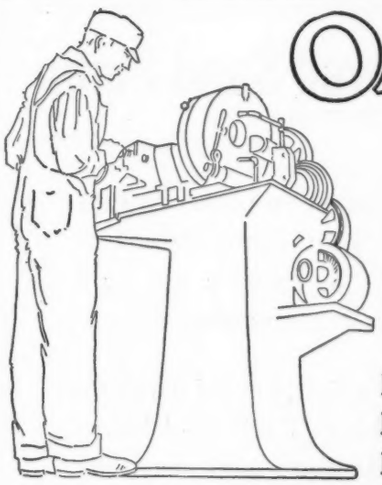
Has never been pulled in.

Complete Steel Derrick

The sturdy old oak derrick got its strength from the fact that it was an angle derrick. O'Brien derricks are **steel** angles. You know the answer.

O'Brien Steel Construction Co.
Washington, Pa.
Rig Equipment Company, Sand Springs, Okla.

OSTER



Repeat Orders Prove Profitable Performance

The fact that owners of Oster pipe machines purchase more of the same equipment to handle increased requirements is the strongest possible proof of satisfactory performance—and profits.

Low operating and upkeep costs, tight threads, speed and ability to withstand hard service are the outstanding features which bring Oster users back for more. Straight pipe, bent pipe, nipples and bolts—and Oster threads them all.

Quick releasing die-head, open type vise, geared flood-system oil pump, automatic die-release and cut-off are other reasons for the remarkable popularity of these machines.

"Pipe-Threading Profits," a generously illustrated booklet made up from actual experiences of Oster owners, gladly sent on request.

The Oster Manufacturing Company
Specialists in hand and power pipe-threading equipment since 1893
2089 East 61st Place Cleveland, Ohio, U. S. A.

All over the world they thread with Osters

MOON TURBINE GENERATOR SETS
ARE
SAFE—
EFFICIENT—
ECONOMICAL

Have You Investigated the New
1½ K. W. Outfit?

The Moon Manufacturing Co.
122 North Jefferson St.
Chicago, Ills.

MOON LIGHTING OUTFITS

Larkin Improved Sand Pump
(PATENTED)

This illustration is the famous Larkin Sand Pump which is found in every oil field throughout the world.

Besides a full line of Drilling and Fishing Tools and Packers of all kinds and sizes, we manufacture the LARKIN Patent Never Slip Pipe Grip, which does away with the old-fashioned way of putting in casing with rope and tongs, and is cheaper, more durable and easier handled.

LARKIN & CO.
Butler, Pa., U. S. A.

Government Operation Argentine Handicap British Expert Says

Sir John Cadman, K. C. M. G., chief technical adviser to the Anglo-Persian Oil Co., Ltd., interview by the London Oil News on returning to London from South America, said:

"The oil field of Comodore Rivadavia is the only oil field in the world, so far as I am aware, owned and worked by a State; and the Government's development of this area has been energetic and progressive. Under any government system there are always difficulties; and these become intensified when dealing with a highly speculative and difficult enterprise such as oil field development always is; and it becomes almost impossible for those in charge to give full effect to their individual initiative and enterprise.

"Some of the difficulties are common to all Governments in all States. An undertaking becomes the happy hunting ground of politics, and personal friends or political influences enlarge the staff with people irrespective of their capacity, while for others jobs have to be made. In a risky enterprise mistakes must be made, for risks have to be taken if progress has to be gained. No man is worth his salt who does not make mistakes, for the man with the courage to chance the risks and mistakes is the same man who makes the progress. But in government affairs the whole construction of the machine is founded on the principle that no mistakes must be made. These two features make it possible for the head of a government administration to carry out his work in such a way as to win the maximum success.

"The geological difficulties and anomalies militate heavily against accurate locating of wells. In a way, the discovery and development of the field has been a romance, for, as everyone knows, oil was originally struck in a well designed for water, and since that day the development of oil in the district has been brought about largely by empirical methods. The oil is found in porous sandstones of Cretaceous age, and in these sandstones of varying thickness and porosity the physical characteristics which govern production are very uncertain. This alone would make forecasts of production unreliable even if the other geological factors were known. When we add to this the fact that several breaks in the geological sequence intervene between the oil horizons and the surface, we have the elements of a problem of colossal difficulty and uncertainty. Only continued drilling, combined with careful study of well logs, can hope to find a solution of the problem.

"Private enterprise attempting to work oil is handicapped by the absence of a mining law applicable to petroleum. I am glad to see the Government is about to correct this, and the broad principles of the proposed new law seem to be sound. There are, however, many details too rigid and inelastic to permit the development of the petroleum industry in a country where technical difficulties are so great; but I am satisfied the common sense of the Argentine will correct these discrepancies. I feel sure when this measure becomes law it will continue the policy the Argentine has always held and which has been so successful, in attracting to her aid foreign interests and capital.

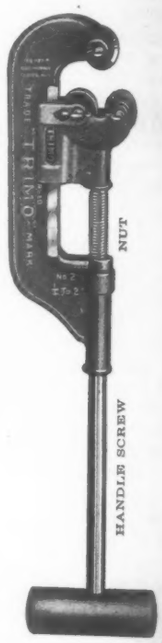
"Only by such a big, broad policy," concluded Sir John, "is greatness obtained, and with the wonderful possibilities in the Argentine (even in oil, though terribly speculative), and with the wonderful potentialities of the future, I am very much impressed."

SAILS FOR AUSTRALIA

Frederick G. Clapp of 30 Church Street, New York, has gone to Australia for several months to make investigations for oil interests in that country. He sailed on the Ventura from San Francisco on December 4.

TRIMO
The Tools For Hard Work

TRIMO users buy for long service. Long wear is built into TRIMO tools. Best possible design, embodying every operating convenience and feature of economy.



The Pipe Cutter

has a drop-forged steel frame, with forged steel cutting wheels. Fully guaranteed by the makers against poor materials or workmanship. All parts easily replaced. Three sizes, No. 1 cuts pipe ⅛" to 1¼"; No. 2 ½" to 2"; No. 3, 1" to 3".

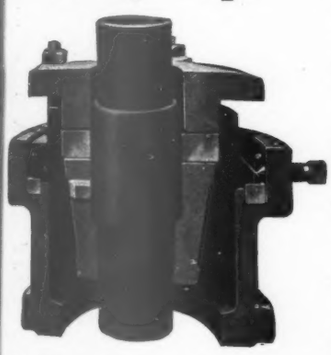
Other Tools Having the
Quality TRIMO Mark
ARE THE
Pipe Wrench—Monkey Wrench
Chain Pipe Wrench

Buy of Your Dealer or Write
TRIMONT Manufacturing Co.
Roxbury (Boston), Mass.

LIGHTNING Lubricator Stuffing Box

Lightning Stuffing Boxes are an improved design and are made in two styles, with either loose seat or regular pattern. All are of the spring tension kind with a lubricator feature that makes them more desirable. They wear longer, require less attention, and are handier for the operator. Order from your dealer or direct from us.

Safety Tops



Lightning Safety Casing Head Tops make a gas or oil tight joint around the tubing. The tubing is held in three tapered slips which grip the pipe and coupling, thereby preventing vibration and danger of a break at the coupling. Ask your supply dealer or write direct to us.

We also manufacture pumping powers, jacks, etc.

Oil Field Supply Dept.
Kansas City Hay Press Co.
Kansas City, Mo.

GULF PORT VESSEL SHIPMENTS DURING MONTH NOVEMBER, 1923

HOUSTON, Tex., Dec. 17.—The shipments of refinery products and crude from Gulf Ports by tankers during the month of November totaled 9,863,349 bbls., an increase of 23,631 bbls. compared with the October figures. The movement of refinery products aggregated 5,324,246 bbls., a decrease of 501,708 bbls., while crude shipments increased 525,339 bbls. over the previous month. The increase in crude is due to increased shipments of Powell crude, especially by the Humble Oil & Refining Co. That company handled a total of 2,737,463 bbls. of crude during November, shipping from Texas City, Baytown, Neches Terminals and Sinco. The latter is on the Houston ship channel, being the terminus of the Sinclair Pipe Line from Mexia and Powell, through which the Humble Co. is running oil in addition to the runs through its own lines terminating at Webster and Baytown.

Crude shipments from Port Arthur also show an increase for the month, but consignments of refinery products are off slightly. Of the grand total for the month, 5,458,736 bbls., or more than 50 per cent was shipped from the Port Arthur-Beaumont district. The Texas City and Houston ship channel terminals loaded 3,320,960 bbls. of refinery products and crude and the South Louisiana district 1,083,203 bbls.

Exports

The export consignments totaled 1,262,407 bbls., made up of 886,926 bbls. of refined and 375,481 bbls. crude. The latter is the largest amount destined for foreign ports during any month of the present year. Compared with October, the refined consignments fell off 559,333 bbls.

The following table gives the shipments in detail by each company:

FROM PORT ARTHUR

By The Texas Co.
Refined

Coastwise	831,722
Export	288,464
Total	1,120,186

Crude

Coastwise	389,537
Export	15,725
Total	405,262

By Gulf Refining Co.
Refined

Coastwise	1,541,061
Export	220,971
Total	1,762,032

Crude

Coastwise	78,338

FROM BEAUMONT

By Magnolia Petroleum Co.
Refined

Coastwise	852,115

61,789 bbls. of total was manufactured fuel.

Crude

Coastwise	199,835

FROM SABINE PASS

By the Sun Oil Co.
Crude

Coastwise	338,443

FROM PORT ARTHUR-NECHES

By Atlantic Oil Producing Co. (Atlantic Refining Co.)
Crude

Coastwise	465,000

FROM SMITH'S BLUFF

By Pure Oil Pipe Line Co.
Crude

Coastwise	92,800

FROM NECHES TERMINAL (Orange Crude)

By Humble Oil & Refining Co.
Crude

Coastwise	145,175

FROM TEXAS CITY

By Humble Oil & Refining Co.
Crude

Coastwise	976,525
Export	221,541
Total	1,198,066

FROM BAYTOWN

By Humble Oil & Refining Co.
Refined

Coastwise	508,925

Crude

Coastwise	754,181

FROM SINCO (Powell Crude)

By Humble Oil & Refining Co.
Crude

Coastwise	576,588

Total crude shipments by the Humble Co., 2,737,463 bbls.

FROM TEXAS CITY

By Vacuum Oil Co.
Crude

Coastwise	147,200

FROM HOUSTON

By Galena-Signal Oil Co. of Texas
Refined

Coastwise	56,000
Export	80,000
Total	136,000

FROM BATON ROUGE (Refinery)

By Standard Oil Co. of Louisiana
Refined

Coastwise	647,497
Export	270,166
Total	917,663

Crude

Export	138,215

FROM NEW ORLEANS (Storage)

By Standard Oil of Louisiana
Refined

Export	27,325

SUMMARY

Vessel Shipments from Gulf Ports During Month of November, 1923

Company and port—	Refined	Crude	Total
The Texas Co., Port Arthur	1,120,186	405,262	1,525,448
Gulf Refining Co., Port Arthur	1,762,032	78,338	1,840,370
Magnolia Petroleum Co., Beaumont	852,115	199,835	1,051,950
The Sun Co., Sabine	.....	338,443	338,443
Atlantic O. P., Port Arthur-Neches	.....	465,000	465,000
Pure O. P. L., Smith's Bluff	.....	92,800	92,800
Humble O. & R., Neches Terminal	.....	145,175	145,175
Humble O. & R., Texas City	.....	1,198,066	1,198,066
Humble O. & R., Baytown	508,925	754,181	1,263,106
Humble O. & R., Sinco	.....	576,588	576,588
Vacuum Oil Co., Texas City	.....	147,200	147,200
Galena-Signal, Houston	136,000	.....	136,000
S. O. of Louisiana, Baton Rouge	917,663	138,215	1,055,878
S. O. of Louisiana, New Orleans	27,325	.....	27,325
Totals for November	5,324,246	4,539,103	9,863,349
Totals for October	5,825,954	4,013,764	9,839,718
Difference	501,708	525,339	23,631

Export Summary

Company and port—	Refined	Crude	Total
The Texas Co., Port Arthur	288,464	15,725	304,189
Gulf Refining, Port Arthur	220,971	.....	220,971
Humble O. & R., Texas City	.....	221,541	221,541
Galena-Signal, Houston	80,000	.....	80,000
Standard of Louisiana, Baton Rouge	270,166	138,215	408,381
Standard of Louisiana, New Orleans	27,325	.....	27,325
Total for November	886,926	375,481	1,262,407
Total for October	1,446,259	.....	1,446,259
Difference	559,333	375,481	183,852

RUMANIANS SEEK U. S. AID

A Bucharest dispatch says that because the negotiations with French bankers have failed a Rumanian semi-official commission will leave for the United States to seek a loan for the development of oil lands. Negotiations will also be carried on with British interests.

"Be Square Products"

Pioneers in the manufacture of High Grade Uniform Quality Western Cylinder Stocks known all over the world as

BIGHEART CYLINDER STOCKS

Bright Stock

Filtered Stock

Steam Refined Stock

Red and Pale Oils

Write, telephone or telegraph for quotations

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Barnsdall Refining Company
Successors to Bigheart Producing and Refining Co.
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CHICAGO, ILL.

New York Kansas City
Los Angeles Tulsa
Refinery: Barnsdall, Ok.

Send For Your Copy

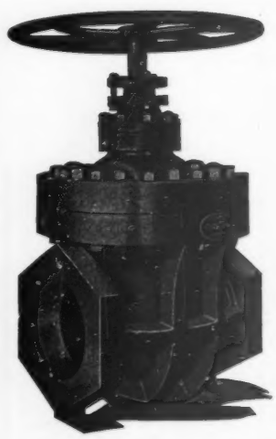
BULLETIN No. 308
Illustrating and describing Jeffrey Oil Well Chains

Jeffrey SS-124 and SS-40 Chains are made especially for the hard service of oil well drilling.

Large Stock Always Available

The Jeffrey Manufacturing Co.
933-99 North Fourth St., Columbus, Ohio

You Can Always Rely on Ludlow



You are neither guessing nor experimenting when you buy **Ludlow Double Gate Valves.**

The successful record of service of Ludlow Valves under all working conditions is your assurance of efficient, economical valve service. Write nearest office for full information.

THE LUDLOW VALVE MFG. CO.
(ESTABLISHED 1866)
Factory: Troy, N. Y.
Branch Offices: Kansas City, Mo.; Chicago, Ill.; Pittsburgh, Pa.; Boston, Mass.

25

CRUDE PURCHASING COMPANIES NOW ENTERING OTHER LINES IN BUSINESS

By N. O. Fanning

NEW YORK, Dec. 17.—The tendency toward the elimination of the crude oil purchasing agencies from the oil business is one of the outstanding features of the petroleum situation. The companies which have for years operated practically as purchasers and nothing else are now rapidly turning to other lines in the oil business, particularly refining and the marketing of petroleum products.

The year 1923 has witnessed a further falling off in the business of the transcontinental trunk pipe line companies, which business is closely linked with the purchasers, inasmuch as the oil purchased by the latter was for the most part run through these lines.

The oil tank steamer is taking more and more business away from the inland carriers, because tank steamer tonnage affords the cheapest possible means of carrying crude and refined petroleum long distances. For this reason, refining capacity is concentrating more and more on the seacost, particularly the Atlantic seaboard.

The causes charged with eliminating the purchasing companies are many. In the first place, the entrance of the big refining companies into the oil production business on a successful basis made them independent of the purchasing agents. In the second place, the purchasing agencies are for the most part operating at interior points and their means of transportation has always been the pipe line for the most part. Refiners have been eager to buy crude where it could be transported by water, rather than at inland points.

The Standard Oil organization, taking the entire Standard group as a whole, have usually been the first to recognize changes in the oil business and have been the first to meet them. Their success originally was founded on the recognition of the value of cheap transportation, coupled with the treatment of the oil business as an industrial problem, with emphasis on economic refining, or manufacturing methods.

The Standard group, as they are constituted today, have been the first to take advantage of the cheap transportation afforded by oil tank steamers. This, however, has meant the gradual elimination of the purchasing company from their scheme of operations, and the long trunk pipe lines have suffered in consequence. The fact that the purchasing companies were originally organized for a definite economic purpose, just as the pipe line companies were, has not spared them now that they are not recognized as economical, from the big refiners' viewpoint.

Business, Not Sentiment

The heads of the big Standard Oil purchasing agencies have been as close to the organization as the heads of the refining and marketing companies. The inauguration of a new policy on the part of the Prairie Oil & Gas Co., whereby that concern entered the refining and marketing business, was actuated by purely business principles. The Standard Oil refiners did not continue to buy oil from Prairie merely to keep that company alive as a purely purchasing company.

The same may be said of Ohio Oil Co. and South Penn Oil, which, organized as purchasing companies, are also branching out into other lines, according to reports.

With every indication of a shortage of crude oil next year, the big refiners may be forced to buy again in large quantities from the purchasing companies. But this is not by any means a certainty, nor is it a probability. The refining companies are developing new oil fields abroad in such a way that, if successful, the oil from these fields can be transported most of the distance to their refineries by means of oil tank steamers.

Two or three years ago a campaign was launched to bring about stability in the oil industry. In 1920, when Mid-Continent crude reached $3.50, the seed was sown for political agitation against the oil industry. In 1921, when the price dropped to less than a third of that figure, the seeds of dissatisfaction were sown in the small producers and refiners. That extremely high or extremely low prices are detrimental was illustrated in these instances, and there was a movement on foot to bring about a fair price structure and keep it there.

Artificial maintenance of crude or refined oil price structures has always been not only impracticable, but impossible. Sooner or later the law of supply or demand is bound to have its way.

The entrance of the big oil refining units into production, however, has proved an extremely wise method of attaining at least partial stabilization. Where the refiner has his own production, he is not forced to pay high prices for crude, and if he can produce enough in one year to last over times of low production, he has, as far as his own business is concerned, brought about an extremely satisfactory condition of things. Only when he has to pay $3.50 per barrel for crude, plus high transportation charges, marketing charges, etc., must he charge 30 cents per gallon or thereabouts for gasoline, wholesale.

Change Was Foreshadowed

Prior to the announcement that Prairie Oil & Gas had bought control of Producers & Refiners Corp., thereby entering for the first time in its history into refining and marketing of petroleum products, it was pointed out in The Oil and Gas Journal that a change in the Mid-Continent purchasing system was the only practical means of stabilizing the situation in that field. That announcement by Prairie was an acknowledgment of the truth of that statement.

However, the change has only just begun. As yet Prairie's purchasing and transportation facilities are largely in excess of its refining and marketing capacity. This means that further expansion of Prairie is likely in the latter branches of the business, and explains the rumors regarding further consolidations hinging around the Prairie organization.

The final result of the conversion of Pairie into an all-around oil organization is expected to be increased stabilization of the petroleum industry, with improved conditions for the business in every respect.

What About the Pipe Lines?

It may be asked as to what fate awaits the so-called Standard Oil pipe lines operating between the southwest oil fields and the Atlantic seaboard. The business done by many of these companies has dwindled considerably in recent years, as have their earnings. Will they eventually be torn up as uneconomical?

This may be safely answered in the negative. The land system of oil transportation which they represent, while not the main transportation cog in the American oil industry any more, will continue indefinitely to be an important part as lines accessory to the ocean carriers. In other words, the time will surely come when the demand for petroleum, and consequent growth in oil refining capacity, will demand oil not only from coastal and foreign fields, to be carried to American refineries by tank steamer, but also from the interior fields of the United States, including the southwest, the Rocky Mountain and possibly other fields yet to be developed. In this case the pipe line system will be extended to the Rocky Mountain, and even to the California fields, if need be.

Furthermore, the pipe line system involved in the so-called Standard Oil pipe lines affords a permanent and economic system which can be looked upon as the mainstay of the American oil industry in case ocean transportation should break down in time of war or under

other possible conditions. The American petroleum industry will never be able to afford to be without such a reliance in case of emergency.

Against Inflation

The next year—1924—will be a highly significant one in the oil business as possibly indicating what progress has been effected in stabilization. With a shortage of crude staring the industry in the face, there is every indication of an advance in prices. However, with the large refiners stocked with cheap crude they may be able to make themselves so far independent of such prices as to be able to continue to supply refined products at moderate, though higher, prices, without having to ask the peak prices which were in effect during 1920.

Runaway prices for oil products invariably act as a boomerang, as they usually result in "investigations" and dissatisfaction, however unfounded that may be. In addition, they encourage the development of substitutes. High prices are charged by the refiners only when they have to pay unusually high prices for crude oil.

The difficulty of such a company as Standard Oil Co. of New Jersey providing far ahead as to crude oil is apparent when the size of its operations is concerned. With its refineries capable of running at least 100,000,000 barrels of crude oil annually, 50,000,000 barrels would last only six months, and the total stocks of crude in the United States held by all companies are not over 350,000,000 barrels, or only seven times that amount.

This concern is said to have in storage 8,000,000 barrels of Powell crude alone. This, however, is enough to keep its refineries running at the rate of 300,000 barrels daily for only about 27 days. Powell production has fallen so rapidly that what looked like a big surplus of crude has practically dwindled to bare necessity within a few weeks.

USE OF SILICA GEL IN PETROLEUM REFINING

(Continued from Page 108)

also has sufficient decolorizing properties to satisfy the strictest commercial demands in this respect.

It is obviously impossible that any material should at the same time have a structure possessing both maximum clarifying properties and maximum power to effect the separation of two liquids from true solution, since the one calls for pores of large dimensions, while the other is dependent on a structure with pores of minimum size.

The ideal material for industrial use must possess both properties in the correct proportion to accomplish the desired removal of both coloring matter and objectionable solutes.

A long series of tests on petroleum oils of great variety have conclusively shown that in silica gel we have the proper balance of the above mentioned characteristics to remove color to any degree commercially required, while at the same time effecting a more complete removal of sulphur compounds than is accomplished by even the best chemical treatment now known.

Other Chemical Methods of Refining

There are, of course, chemical means other than sulphuric acid for the extraction of sulphur compounds; such, for example, as treatment with liquid SO_2, or an oxidation method, of which sodium hypochlorite treatment is typical. Neither of these latter mentioned methods, however, avoids the objection pointed out in the case of sulphuric acid, since in both cases a removal of unsaturated bodies accompanies the extraction of sulphur. And, furthermore, in the case of a hypochlorite treatment of cracked gasoline, objectionable chlorine compounds would remain in the oil itself. It need hardly be pointed out that in attempting to refine oils high in unsaturated hydrocarbons by this method, a greatly increased consumption of chlorine would result as compared to the treatment of saturated oils.

Increased Gasoline Yield

We have, therefore, discussed the superior quality of petroleum products, when gel refined, as compared to the same products, prepared by the chemical treatment now in general use. We will now consider the phase of our discussion of more immediate interest to the refiner himself. We do not mean to suggest that the refiner is not also interested in the quality of the product he turns out, but it is only natural that his greatest enthusiasm is aroused by the anticipation of greater yields and, therefore, reduced costs.

In order to measure the quantity of gasoline obtained from a given distillate, we must first define by certain distillation characteristics exactly what fraction we have in mind. The specification for New Navy gasoline has become more generally adopted, perhaps, than any other in general use, and will, therefore, be used in the present discussion. This specification stipulates a 437°F. end point, and a very definite method of determining accurately this end point has been set forth in the Government bulletins. Our reference hereafter to "Gasoline" will always be, therefore, to the fraction above mentioned as "New Navy" motor gasoline.

The present study was made on a

(Continued on Page 158)

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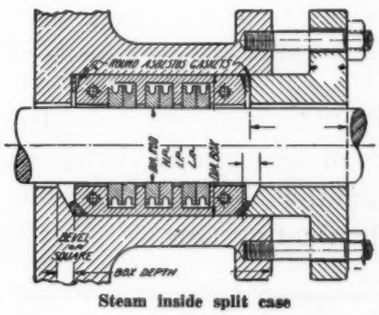

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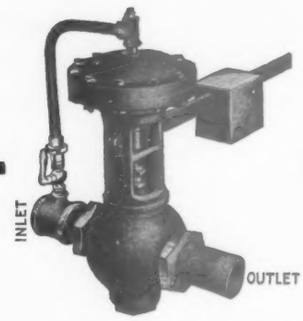

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Chief Deputy Thinks California May Halt At 600,000 Barrels

The Santa Fe Springs Field in California appears to have settled down to a more evenly distributed output. Following the first big slump the gas was erratic, pressure dwindling in a marked degree, yet showing surprising increase whenever wells have been shut down for a day or two. This tendency was particularly true of the Bell sand, the second producing zone of the field and one frequently passed by in the eagerness to secure high gravity oil found in the lower or Meyer zone. Now many of the operators are planning to explore this zone and anticipate fairly good wells for some time to come, but nothing like the big gushers.

L. B. Case, chief deputy to State Supervisor, in charge of the Los Angeles office, believes California daily production will continue to decline until it reaches about 600,000 barrels daily, after which it will run parallel with that average for some months.

In support of his contention he points to the tendency both at Santa Fe Springs and Huntington Beach. While the latter never was as spectacular as Santa Fe Springs or Long Beach, it is expected by many experts to hold its own as long, if not longer than either, since many of the larger leases of the field—those principally held by the Standard—never have been fully developed.

Much of the water trouble halting production in Santa Fe Springs, he attributes to too deep drilling. Wells sent but half as deep in the Meyer zone are now dry while the deepest drilled in many cases have developed water which has killed the flow. Much of this trouble, he thinks, could be corrected by plugging the bottom of the holes and pumping off the excess water, thus permitting the oil to resume its natural flow, is his contention.

Many wells now reported as "dead" will be brought back to production, either by the above mentioned means, or by placing them on the pump, and Santa Fe Springs, according to curves outlined by the State Mining Bureau, should continue as a producing field for at least seven years. Long Beach, because of its depth of sand, which exceeds 2,000 feet in parts of the field, will produce much longer, state engineers.

CITY'S OIL ROYALTIES

LOS ANGELES, Calif., Dec. 16—Long Beach City's oil and gas royalties for the first four months of the fiscal year totaled $252,348. With 10 wells drilling or nearing completion on city leases, the city auditor's department figures revenue from this source will be doubled by March 1. The 1923 records show October the outstanding month for oil and gas royalties, city leases constributing a total of $85,960. Of this amount the Jergins Trust, which holds a lease on the 140-acre municipal water lands, was the heaviest contributor, with $65.138. Royalties from other sources included Southern Counties Gas Co., Ramsey interests, Lomita gasoline and Cherry-Hill leases.

City royalties for July production were $50.906; August, $53,148; September, $62,325. Since Long Beach first began receiving royalties the city revenues have been enriched to the extent of $846.842. The present oil fund contains $417,117.

BUILDING BOOSTER STATION

About 625 horsepower of Miller direct gas engine driven compressors have been installed in the booster station which The Texas Co. is building at Eastland, Tex., for its natural gas distribution system which serves a number of towns in the western part of the State. Miller compressors have also been installed in The Texas Co.'s booster station at Moran, Tex.

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GOVERNMENT'S OIL ROYALTIES INCREASE

WASHINGTON, D. C., Dec. 17.—Oil and gas developments under direction of the Interior Department are reviewed in the annual report of Secretary Work. "Within the year," says the report, "two important contracts for the sale of royalty oil were concluded, resulting in a large increase in Government royalty. Royalty oil produced on leases in the Salt Creek Field, Wyoming, is now purchased at prices prevailing in the Mid-Continent Field, and the increase in price on Salt Creek crude received under this contract is increasing the revenues approximately $3,000,000 a year. The purchase of oil produced in the smaller Cat Creek Field, Montana, at 40 cents a barrel more than the Mid-Continent price is increasing the revenues about $100,000 a year."

Under the Mineral Leasing Act, which authorizes leases to permittees who show discovery, four leases were issued covering 1,604.80 acres. Under Section 17, authorizing a public sale of leases, six leases were issued for an area of 1,715.48 acres. The total bonus paid for the leases amounted to $26,620. Under Sections 13 and 20 4,626 new applications for permits were filed, 3,534 permits were granted and 3,974 rejected.

Action on applications under the relief sections resulted in the allowance of 50 leases and 70 permits and the final disposition of 189, either by rejection or otherwise, leaving pending 83 cases.

From the date of the leasing act 1,197 applications for oil and gas permits in Alaska have been received, 1,078 filed in the Juneau Land Office, 119 in the Nome office and 20 in the Fairbanks office. Disposition has been made by the granting of 753 permits and final rejection of 111. Final action in the other cases awaits additional evidence. Applications filed in the year number 200, covering 512,000 acres.

Receipts under the Mineral Leasing Act for the fiscal year were $7,579,750.48, of which $7,503,991.29 were from public lands and $75,759.10 were from naval petroleum reserve lands.

The Bureau of Mines during the fiscal year supervised the production of 37,894,803 barrels of oil on the public domain, yielding royalties of 7,647,045 barrels, valued at $10,244,775. In addition, the revenues from natural gas amounted to $187,068 and from gasoline $116,777. The growth in output of royalty oil or share collected by the Government from all public lands, including naval reserves, is shown in the following table:

Fiscal year—	Royalty oil, barrels.	Per cent increase based on year 1920-21	Per cent increase based on total for 3 years
1921.....	1,392,324	.....	10.32
1922.....	3,583,438	177.21	28.62
1923.....	7,647,045	491.73	61.06

The year's leasings of public lands for oil and gas mining exceeded 300,000 acres; the gross oil production was about 54,000,000 barrels, and the revenue to the Indians was approximately $37,000,000. In the Osage reservation, Oklahoma, 67,864 acres were offered for lease, 48,031 acres selling for a bonus of $14,246,600. The Osages received $30,572,111 from existing oil and gas leases.

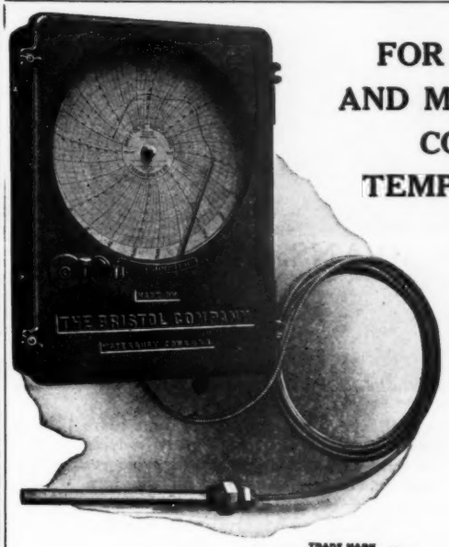
SIR HENRI DETERDING SAILS

NEW YORK, Dec. 17.—"Mexican Eagle will continue its operations in Mexico," said Sir Henri Deterding, managing director of Royal Dutch Petroleum Co., sailing after an inspection trip through Mexico.

"I know nothing about the Anglo-Persian operations except what I have read in the papers. I have made no move in that direction while here in America.

"The Shell Co. is not operating in Russia. The only people operating there at the present time are the Soviets. Other companies would not be foolish enough to operate there.

Amsterdam advices say a new director will be elected by the Royal Dutch Co. to replace H. Colijn and that he will remain in London.



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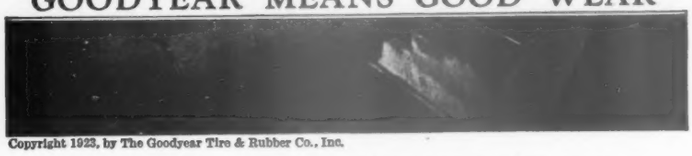

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Canadian Pioneer Recalls Early Days Around Oil Springs

By Victor Lauriston

CHATHAM, Ont., Dec. 15. — Among the men who saw the very beginnings of oil development in Canada, Dallas P. Sisk, of Oil Springs, is almost the last survivor. "Dad" Sisk, as he is known to his friends, still lives at Oil Springs, the early metropolis of Canadian oildom, and vividly recalls the days when the great boom of the early days elevated what is now a small hamlet to almost the status of a city.

"Dad" Sisk does not need to be told that the oil game is a decidedly speculative one. He knows; for he has seen fortunes made and lost in the industry.

"The history of the Oil Springs oil field is a peculiar one," he stated, "and the industry itself has had a checkered career since oil was first found. Those who do not know of the ups and downs that are encountered by men engaged in producing oil imagine that the business is one of the greatest money makers in which a person can invest his capital. True, some parties have become independently rich through oil, but they are the exceptions. For every one who has become rich there are thousands who have lost their all.

"This has been shown to be a fact in connection with the rise and fall of the business in Oil Springs. Very few have made more than a living, while others more fortunate have been able to lay by more than they would have done in any other investment. This does not mean that those who failed did not put forth the same amount of energy and push as the others; but owing to the fact that the well was a duster, tools lost, unable to shut off the water, and the thousand and one little things that occur particularly in this business, blocked the way to a successful ending of the venture.

Revealed by Accident

"Here in Canada there is not as much chance to go into the business as there is in the United States, as oil is found in nearly every State of the Union, while in Canada there are not more than half a dozen places where it is got in paying quantities. When J. H. Williams of Hamilton, Ont., in 1860 (or, as some say, in 1857) was induced by a trapper to invest in property in Enniskillen township, now known as the gum beds, no one thought that he was opening up an industry that would continue and be as lasting and as world wide as it has been. Williams erected large log buildings, put in retorts for the purpose of melting the gum and refining the oil, never for one instant dreaming that there was a vast lake of oil below.

"Accident, as it has done in many other enterprises, revealed to him the secret. Needing water, he started to put down a well, and before he reached the rock he struck a big vein of what is called surface oil, used solely for lubricant purposes.

"The news was soon known, and the oil fields of Pennsylvania having caused such an excitement, speculators' eyes were turned toward the new field in Canada, and they began to flock here. Then it was that such well-known men as Bush & Anthony, Sanborn & Shannon, the two Bradleys, Vaughn & Kelsey, the Siftons, Captain Sisk, Whipple, Noyce, 'Soapstone' Campbell, Duffield, Fairbank, Perkins, Chamberlain and Bruce and others came in to invest.

"The accommodations, it was needless to say, were insufficient; and the fortune seekers lived and were housed in almost any way. Most of them secured lots along the banks of Black Creek, or on the flats. Drilling was done by means of the old-fashioned spring pole, and it took three or four months to finish a well.

Struck Flowing Well

"The Shaw flowing well, known the world over, was struck, and the excitement grew. Everyone was looking for a 'flow.' Soon the Bradleys, McLean, Evoy & Jury, Swan, Black & Mathew-

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son, Barnes, Allin, Murdock & McCall, Nelson and others were drilled in, and the country went oil mad.

"A plank road was built to the old Great Western Railway, 12 miles north. Think of it! Three hundred teams by actual count drawing oil, 12 barrels to the load, day in and day out, to Wyoming, the terminus of the road. No one thought but that the boom was lasting; but although refineries were built in the village, Sarnia, Mooretown, Wyoming, London and other places, oil slowly dropped in price till it was worth only 5 cents a barrel at the wells, and everything came to a standstill.

"But in 1864 and 1865 things began to look more cheerful; and soon, owing to the wild speculation that had gone on in the American oil fields, the Americans began to flock here again, and what is known as the greatest excitement that has been seen or heard of in the oil business commenced. A plank road was built to Sarnia, 20 miles distant; six stages left for and arrived from Sarnia and Wyoming daily, banks were established, a board of trade organized, and the village took on a cosmopolitan appearance.

Fenian Raid Exodus

"At this time there were 12 large general stores, besides a large number of small shops of various descriptions, a daily newspaper and nine large hotels in full blast, besides saloons, etc. In addition to these nine, a Chicago company, for whom one Hall was manager, built during that season a very extensive hotel, said at the time to be the largest wooden building in Ontario. It contained 108 bedrooms, with a proportionate number of all other kinds. On the very day the plasterers finished work upon the interior, the Fenian Raid occurred, the American exodus took place at once, and the new hotel was never even swept out.

"The main street was 'planked' for the distance of a mile and a half with double width and double thickness of white oak, and was justly called the finest paved street in Canada. There was a line of omnibuses running from one end to the other of the town every five minutes during the day, and at longer intervals during the whole night. The streets were brilliantly lighted with ornamental lamps, set on handsome posts, and a regular line of stages plied four times daily by the new plank road to the county town, 19 miles distant in a straight line, the traffic over this road being so immense that two continuous 'streams' of vehicles poured over it in opposite directions, day in and day out.

Big Prices Refused

"And as an instance of the manner in which prices of property were affected by the boom, I might just refer to a few sales during the prosperous times. The west half of lot 17, concession 1, was sold for $22,000, and never a single barrel of oil was taken out of it, as the oil interest collapsed soon after. Lot 21, concession 1, was purchased for $80,000 by an American company, who subsequently disposed of it for $1,200. The Chicago & Oil Springs Co. paid $14,000 in gold for 8½ acres on lot 16, concession 2, and offered $20,000 for another piece of equal size adjacent thereto, but was refused. A frame hotel with half an acre of land attached was sought by an American who offered $9,000 in gold for it, but was refused.

"Yes, those were booming times! But now the scene is changed, and such a change. Soon after oil 'blew out' at the Springs, the population had fallen from 4,000 to below 300. Now, by the increase occasioned by the natural development of the surrounding country, caused by the building of the Canada Southern (now the M. C. R.), the population numbers 650.

"Oil Springs was incorporated as a village under the general provisions of the municipal act in 1864, the said provisions coming into effect in 1865, and at the first village election John H. Bennett was returned as reeve; Henry Brown, clerk; John Savage, treasurer; James Gray and George Robertson, as-

(Continued on Page 158)

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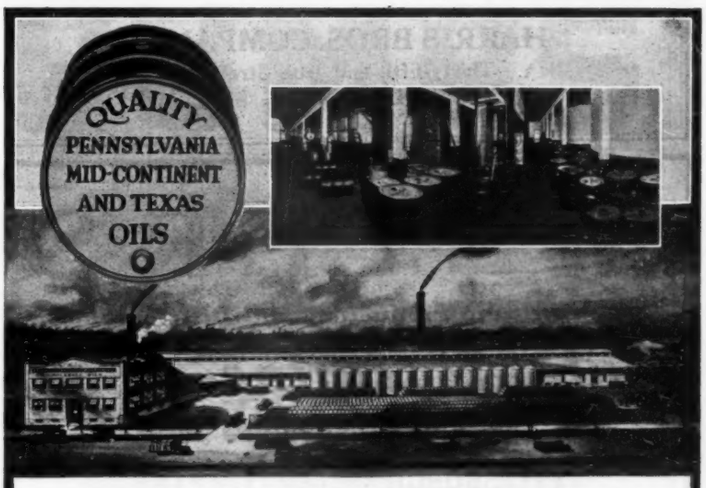

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U. S. Largest Owner Of Oil Lands, Says Mines Bureau Chief

WASHINGTON, D. C., Dec. 15.—The "present period of overproduction" in the oil industry will end by the middle of 1924, Dr. H. Foster Bain, director of the United States Bureau of Mines, predicted in testifying before the Senate Public Lands Committee's inquiry into the leasing of Government oil reserves. He based the prediction, he said, on opinions of experts in whose judgment he had implicit confidence.

Discussion of the market conditions grew out of efforts of Senator Walsh, Democrat, of Montana to obtain from the witness an estimate as to the period in which the Government might feel confident of obtaining in the open market almost any quantity of oil for storage as reserves.

"It is hard to state a definite figure," the director said. "If the Government would be willing to pay the price demanded it should have no difficulty, certainly for a reasonable number of years. Men in whom I have every confidence believe the present surplus will be met by consumption by the middle of next year. It is a fact that every company which has the capital is now storing all it can and selling as little as possible at prevailing prices."

Fears Oil Shortage

David White, expert geologist of the Geological Survey, predicted that within five years the United States will be dependent upon imports for a portion of its oil supply for domestic purposes. He doubted whether the navy could go five years longer with constantly decreasing consumption upon domestic oil production. He did not believe all the oil fields of the United States had been discovered.

Other representatives of the Geological Survey appearing before the committee were of opinion that the portion of the Teapot Dome south of the Fault or Saddle would not have been drained by any operations on adjoining private holdings. Director George Otis Smith said the Teapot was regarded by geologists in whom he had confidence as an ideal reserve that could not be subjected to drainage. Mr. Smith did not wish to express an opinion as to whether oil would be found in the Lakota sand.

Director Bain showed there had been wide knowledge and numerous efforts to have additional offers for the drilling of reserves No. 1 and 2. In explaining the failure of Teapot Dome to come up to expectations, he said the first Wall Creek sand was supposed to have 50,000,000 bbls. of oil, but it proved there was no oil of any consequence in it. Speaking of the offers for the Teapot Dome, he said the contract offered by President Beaty of The Texas Co. was very much less desirable than was the contract made with Mr. Sinclair. He said that up to this time by reason of obtaining the market price prevailing in the Mid-Continent Field the Navy had obtained 41 cents (41c) a barrel more for its oil than the price prevailing in Casper.

Report on Oil Leases

In reviewing the work of supervision of oil and gas operations on leased public lands, which is entrusted to the Bureau of Mines. Director Bain stated that oil production on public lands during the fiscal year 1922-23 more than doubled that of the preceding year. The United States today is the largest owner of proved and prospective oil lands.

Oil is now being produced under leases from public lands and Naval petroleum reserves in California, Colorado, Montana and Wyoming. During the year ended June 30, 1923, wells on public lands, other than Indian lands, yielded 28,443,357.80 bbls. of oil, from which the Government received as its royalty 5,466,171 bbls., valued at $8,071,051.30. In addition to this, royalties from gas produced amounted to $121,885.01, and gasoline extracted from natural gas brought royalties of $59,834.26. During the same year Naval petroleum reserves in Cali-

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fornia and Wyoming produced 9,451,445.67 bbls. of oil from which the Government received as its royalty 2,180,874.92 bbls., valued at $2,173,724.67; the gas royalties amounted to $64,899.22 and the gasoline royalties to $57,226.73. From all Government lands, royalty oil was valued at $10,244,775.97, gas royalties at $186,784.23, and gasoline royalties at $117,060.99. Thus the total income from oil, gas and gasoline production on public lands and Naval petroleum reserves amounted to $10,548,621.19.

The Federal Government has been leasing oil lands for more than three years, having begun on February 25, 1920, when it departed from its historic policy of selling mineral lands and substituted a leasing system. During this period the public lands have yielded 9,061,120.21 bbls. of royalty oil, valued at $13,331,906.84, and the Naval petroleum reserves have added 3,461,695.83 bbls. of royalty oil, valued at $4,222,560.64. Of the royalty oil produced on public lands within the past three years, 11.32 per cent was produced in 1921, 28.35 per cent in 1922 and 60.33 per cent in 1923. Production on the Naval petroleum reserves has shown an equally rapid expansion, 7.69 per cent having been produced in 1921, 29.31 per cent in 1922 and 63 per cent in 1923.

LUCEY MANUFACTURING REORGANIZATION PLAN

Creditors and stockholders' protective committees of the Lucey Manufacturing Co. have worked out a temporary plan of reorganization by which it is expected the receiverships of the parent and subsidiary companies will be lifted. The creditors of the Tennessee subsidiary have agreed to extend payment of their claims for two years, taking as security a mortgage on the Tennessee plant. This agreement has been approved by the Tennessee Court, and should soon be effective. The committee believes similar action in the receivership of the Texas subsidiary will result from the cooperation of creditors and Captain Lucey, who has a controlling interest in the parent company's B stock.

The temporary plan expected to lift the parent company receivership provides for creditors taking two-year 6 per cent notes which are to be issued under terms giving control of the properties to a committee representing all the interests until notes are liquidated.

Class A stockholders of Lucey Manufacturing Co. are to receive par for par preferred stock of the temporary company or an equivalent amount of no par preferred bearing $4 preferred dividends, non-cumulative for three years, and such preferred entitled to elect one director. Class B holders are to receive share for share of no par in the temporary company and the right to elect one director.

A new class of common authorized to the extent the committee controlling approves, and to be known as "manager's stock," is to be issued for the purpose of interesting management and capital, but the controlling committee will have no personal interest in these shares. This stock will have power to elect the balance of the directorate. The controlling committee can cause the temporary company to be terminated at any time after nine months from the termination of the receivership.

MORE REFINING IN ENGLAND

There is more refining in England leading to the importation of more crude and less fuel gasoline. There is no intimation of the possibility of a tariff on refining products. The past month marked the further tendencies for consolidation of companies, notably the Shell interests offer to buy government holdings controlling the Anglo-Persian stocks, and the absorption of the Angola Oil Fields (Ltd.) by the Phoenix Oil & Transport Co. and the Rumanian Consolidated Oil Fields (Ltd.). British capital is being urged to gain or regain control of new fields and intensely develop possibilities of liquid fuel from domestic coal and shales.

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PIONEER RECALLS EARLY DAYS NEAR OIL SPRINGS

(Continued from Page 155)

sessors; George H. Lee, collector; and William F. Thompson, G. O'Grady, Robert McBride and William Harrison, councillors.

Oil Pioneers

"Among the pioneers in the oil industry in Oil Springs who later moved to Petrolia were J. H. Fairbank, R. A. Townsend, H. Cooley, Oliver Simmons, E. Coryell, James Perkins, J. McCort, S. Stokes, James Loughead and William Hammond; and among the early merchants were Thompson & McGarvey, Henry Bishop, Danks & Keating, James Kelly, Richard Bros., Clark & Rutherford, Hiram Peats and Henry Truman. When the American War closed and the Fenian Raid followed, however, the bottom dropped out of everything, and silence reigned.

"There were some few left who had seen the business rise and fall twice and yet had faith in getting oil in larger quantities than ever, and an effort was made to have a well put down 1,000 feet.

"Outside capital could not be enlisted in the scheme; and that, combined with the opening up of the Petrolia oil fields and the lack of proper facilities, stopped further proceedings. In 1868 James Lockhart, manager of the Glasgow Oil Co., at that time one of the largest refineries in Canada, put down a well on the east side of lot 18, concession 2, on the banks of the creek. Whether he was successful or not, no one, except those who worked for him, knew; for he, as the saving is, got his Scotch up at the council refusing him a bonus, and plugged the well.

Present-Day Pumpers

"The next spring H. C. Crocker of Milwaukee, Wis., one of those who had lost a fortune in 1865-66, formed what was called the Washington Oil Co. and drilled three wells on his property, lot 19, concession 2. These wells were put down to the big water or flowing vein and 5-inch pumps put in to pump them, but owing to the great volume of water they had to contend with, the venture had to be abandoned.

"In 1880 a company was formed by the people who were yet here, and shares sold at $20. Captain Savage, of Petrolia, was engaged to do the drilling; and this well, known as the Excelsior, was put down to the big water and lots of oil found. But people had got wiser and had to be shown that there was oil lower than where it had been found. The well was drilled deeper and the vein discovered from which our producers are still pumping oil today, 43 years later."

USE OF SILICA GEL IN PETROLEUM REFINING

(Continued from Page 151)

naphtha distillate which is a representative sample of the average naphtha being refined by one of the largest Atlantic Seaboard refineries. It contained both straight run and cracked distillates, and was made from a combination of all crude oils now commonly used by Seaboard refineries. It may, therefore, be considered quite representative of the bulk of gasoline produced by Eastern refineries.

The yield of gasoline obtained from a given quantity of naphtha distillate when refined by present methods, is diminished in two distinct ways. First, by actual shrinkage of volume; and second, by raising the boiling point of certain unsaturated hydrocarbons, through polymerization of these unsaturated bodies. Such polymerization is brought about by reaction between the sulphuric acid used for refining the distillate, and the above mentioned unsaturated hydrocarbons; the effect being to produce higher boiling fractions out of a portion of the gasoline present, and to this extent reducing the gasoline content of the naphtha being refined.

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physical nature of the treatment. There is, on the other hand, an actual increase in the gasoline yield due to the selective removal of the high boiling sulphur compounds; the net result being an increased yield by the gel treatment amounting to 4 per cent of the original distillate. This 4 per cent difference is a combination of the two above mentioned effects, namely, the loss of gasoline when treated chemically, due to polymerization of unsaturated bodies, and the increased yield when gel treated, due to removal of high boiling sulphur compounds.

The shrinkage in volume, due to chemical treatment, will vary somewhat with the amount of acid used for treatment, and is more difficult to determine accurately on a small scale than is the gasoline content of the refined naphtha above mentioned. From information obtained from various refiners treating this kind of naphtha, we believe this loss to be not less than 2.0 per cent.

The total loss of gasoline present in the original unrefined distillate is, therefore, as follows:

Loss by volume shrinkage	2.00%
Reduction of gasoline yield by polymerization	4.00%
Total	6.00%

The loss, due to shrinkage of volume is well known to all refiners, and has been the only loss that heretofore have claimed their attention. This position may have been a sound one to take before the advent of cracked gasoline, but now that every refiner is face to face with the absolute certainty of handling a mixture of straight run and cracked distillates, he has also to deal with the loss by polymerization above referred to. And since this loss is about twice that due to volume shrinkage alone, it is a correspondingly greater menace to his final yield of gasoline.

Classified Advertisements Pages 140-141

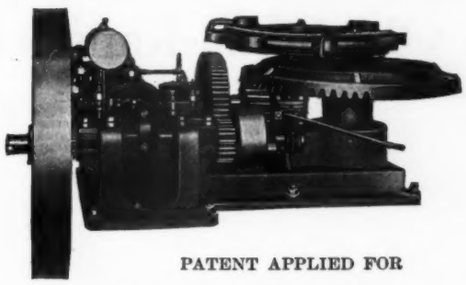
Refining Costs by Silica Gel Process

The only unfriendly criticism the gel process of refining has had is based on a misunderstanding on the part of some as to the cost of this treatment. That a superior product is obtained is acknowledged by all who have seriously investigated the process. The average refiner has argued, however, that he could charge no more for better products, and is therefore unwilling to make any change that would increase his present costs, even though by so doing, he could furnish superior products. While we do not agree with his conclusion, it in no way embarrasses the silica gel refining process since we have conclusively shown by operation on a commercial scale that a very large reduction in the total cost of refining is effected, concurrently with the better refining above mentioned.

The tabulation of comparative costs, shown on page 34, is based on the assumption that in the case of gel treatment a gasoline distillate of proper end point will be cut directly on the primary stills. This avoids the rerun distillation now customarily made after a chemical treatment, and furthermore reduces the quantity of distillate to be treated, by approximately 35 per cent.

The chief advantages of the gel process, which results in less refining costs, may be briefly stated as follows:

1. Reduced quantity of distillate to be refined.
2. Elimination of rerun distillation.
3. Increased yield of gasoline.



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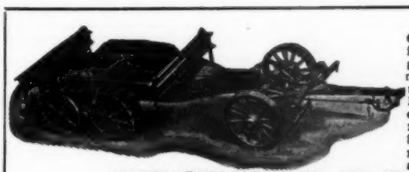
H. M. SPENCE, Parkersburg, W. Va.



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Sizes, ½" to 24"

Essex Lubricating Devices Are Oil Country Favorites!

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Sold by jobbers everywhere.

Catalogue on request

Essex Brass Corporation
2000 Franklin Street
DETROIT, MICH.

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for October

Runs

	Month	Daily Av.
*Prairie Pipe Line Co.	2,387,000	77,000
Gulf Pipe Line Co.	1,043,379	33,657
The Texas Co.	474,227	15,298
Magnolia Pet. Co.	909,711	29,346
Empire Pipe Line Co.	844,521	27,243
Cosden Pipe Line Co.	546,141	17,617
Sinclair Pipe Line Co.	517,281	16,687
*Other lines	7,006,000	226,000
Total October	13,728,260	442,848
Total September	13,995,248	466,507
Difference	266,988	23,659

Shipments

†Prairie Pipe Line Co.	2,500,871	80,673
Gulf Pipe Line Co.	1,474,651	47,570
The Texas Co.	404,424	13,046
Magnolia Pet. Co.	408,645	13,182
Empire Pipe Line Co.	800,966	25,838
Cosden Pipe Line Co.	650,357	20,979
†Sinclair Pipe Line Co.	1,327,428	42,820
*Other lines	5,736,000	185,000
Total October	13,302,342	429,108
Total September	13,181,119	439,371
Difference		10,263

Stocks

*Prairie Oil & Gas Co.	23,000,000
*Prairie Pipe Line Co.	1,350,000
Gulf Pipe Line Co. & Gypsy Oil Co.	8,896,778
The Texas Co.	7,909,376
Magnolia Pet. Co.	7,994,555
Cosden Pipe Line Co.	3,345,257
Empire Pipe Line Co.	2,862,027
*Sinclair Crude Oil Purch. Co.	30,425,000
Carter Oil Co.	17,688,228
*Other lines	4,600,000
Total October	108,071,221
Total September	105,557,684
Difference	2,413,537

*Estimated. †Includes shipments of Texas crude oil.

Note—Stocks do not include approximately 7,200,000 bbls. of crude oil held in storage on private tank farms and leases.

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1920	1921	1922	1923
January	56,004	64,460	67,702	75,790
February	68,699	70,054	75,096	71,093
March	67,745	68,555	78,531	76,592
April	64,589	65,036	75,462	75,614
May	63,937	65,466	77,592	77,365
June	68 750	62,438	76,193	77,592
July	66,489	59,486	76,435	71,879
August	63,861	64,888	79,387	76,910
September	68,102	60,110	78,512	72,358
October	65,066	57,688	77,209	76,256
November	62,758	58,470	75,313	
December	60 975	61,000	73,351	

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1920	1921	1922	1923
January	98,835	115,550	119,792	171,067
February	107,146	96,736	111,362	164,219
March	110,777	84,168	127,753	185,487
April	114,090	101,015	127,068	179,751
May	110,219	100,253	127 840	177,102
June	102,598	105,037	137,638	173,598
July	112,340	97,096	137,872	168,330
August	122,296	101,652	153,275	142,766
September	127,131	117,440	158,761	137,266
October	122,891	105 728	165,345	134,597
November	117,730	121,803	165,677	
December	117,201	104,023	172,861	

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1921	1922	1923
January	7,916,353	16,297,858	14,040,567
February	8,721,878	17,009 293	14,028,437
March	9,818,766	16,877,937	13,873,146
April	10,369,941	16,777,842	13,737,575
May	11,224,694	16,948,962	13 816,622
June	12,328,126	16,810,169	14,541,252
July	13,798,698	16,669,286	14,645,584
August	15,155,633	16,235 229	14,770,539
September	15,525,750	16,228,545	14,803,444
October	15,761,079	15,757,746	14,504,111
November	14,971,071	15.171,972	
December	15 854,741	14,323,765	

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1922—	Receipts	Shipments	Stocks
October	3,368.58	4,783.61	29,313.13
November	3,052.75	2,230.18	30,135.70
December	3,076.36	1,292.84	31,919.22
1923—			
January	2,798.55	2,461.36	32,256.41
February	2,692.93	932.33	34,017.01
March	2,978.88	12,417.00	24,578.89
April	3,529.12	3,064.09	25 053.92
May	3,538.73	4,856.42	23,736.23
June	2,927.71	4,743.78	21,920.16
July	2,996.64	1,471.57	23,445.23
August	3,199.07	3,769.34	22,874.96
September	2,829.79	5,822.38	19,882.37
October	2,694.23	5,251.81	17,324.79

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Nov. 1	2,466,238.64
Runs from wells	544,861.93
Other receipts	119,965.33
Regular deliveries	228,961.55
Other deliveries	474,479.61

The amount of Illinois oil run by the Tide Water Pipe Line Co. on October was 32,005.16 barrels, and deliveries were 118,851.27 barrels. Adding these figures to those of the Illinois Pipe Line Co., makes the runs and deliveries from the Illinois Field as follows:

1922—	Runs	Deliveries
October	618,459.82	454,005.38
November	566,508.03	434,681.97
December	552,069.33	391,868.37
1923—		
January	599,239.86	470,958.84
February	496 421.79	382,566.83
March	625,006.81	472,920.76
April	521,910.87	423,548.43
May	624,107.98	523,516.00
June	582,511.82	509,137.77
July	594,653.42	489,269.17
August	594,747.94	367,152.82
September	542,561.59	305,925.40
October	576 867.09	347,812.82

The Tide Water Pipe Co., Ltd., also delivered in October 192,614.57 barrels of Oklahoma oil. The total deliveries of all grades by the Tide Water were 477,869.02 barrels.

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., '23	Oct., '23
Nat. Transit	188,712.56	211,486.93
S. W. Pa. P. L.	82,300.00	93,352.02
Eureka P. L.	368,672.93	430,327.54
Buckeye P. L. (Macksburg)	250,485.71	280,073.58
Buckeye P. L. (Cleveland)	16,280.77	19,218.85
Buckeye P. L. (Lima, etc.)	139 388.04	144,889.47
Indiana P. L.	14,150.22	14,811.54
Cumberland P. L.	386,752.33	399,736.19
N. Y. Transit	15,261.47	17,402.53
Tide Water P. L.	149,139.68	163,016.59
Pure Oil P. L.	177,281.66	190,792.36
Emery P. L.	31,486.08	35,209.98
Paragon Ref.		
Inidan Ref.	309,242.57	315,405.99
Paragon Dev.	32,320.51	31,501.81
Pittsburgh P. L.	8,272.29	10,612.83
Swiss P. L.	995.34	1,015.89
Riggs Ref.		5,083.17
Total	2,170,742.30	2,363,937.27
Daily av.	72,358.08	76,256.04

Note—Indian Refining Co. also reported other receipts of 92,674.20 bbls. Paragon Refining Co. had other receipts of 117,513.75 bbls. Paragon Development Co. had other receipts of 5,932.65 bbls. Pittsburgh Pipe Line had other receipts of 2,587.79 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., '23	Oct., '23
Nat. Transit	412,333.27	497,929.96
S. W. Pa. P. L.	261,116.40	293 546.24
Eureka P. L.	130,178.48	126,716.36
Buckeye P. L. (Macksburg)	86,985.91	
Buckeye P. L. (Cleveland)	1,056.36	
Buckeye P. L. (Lima, etc.)	693,616.91	
Indiana P. L.	924,686.09	
Cumberland P. L.	160,116.97	
Southern P. L.		
Crescent P. L.	73,331.96	
N. Y. Transit	359,939.97	
Northern P. L.	69,794.27	
Tide Water P. L.	180,612.43	
Pure Oil P. L.	173,186.23	
Emery P. L.	31,492.28	
Paragon Ref.	114,947.24	
Indian Ref.	294,144.15	
Paragon Dev.	37,152.37	
Pittsburgh P. L.	11,341.66	
Swiss P. L.	1,939.86	
Riggs Ref.		
Total	4,017,972.79	
Daily average	137,365.76	

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of Pennsylvania, New York, West Virginia, Ohio, Indiana and Kentucky at the close of September and October were as follows:

	Sept., '23	Oct., '23
Nat. Transit	1,197,343.90	
S. W. Pa. P. L.	924,128.98	
Eureka P. L.	1,924,234.44	
Buckeye P. L. (Macksburg)	492,970.76	
Buckeye P. L. (Cleveland)	12,414.25	
Buckeye P. L. (Lima, etc.)	4,214,807.68	
Indiana P. L.	681,376.15	
Cumberland P. L.	732,274.03	
Southern P. L.	959,768.25	
Crescent P. L.	78,603.29	
N. Y. Transit	1,739,879.71	
Northern P. L.	930,869.96	
Tide Water P. L.		
Pure Oil P. L.	293,002.25	
Emery P. L.	5,811.39	
Paragon Ref.	180,341.45	
Indian Ref.	400,841.76	
Paragon Dev.	11,121.59	
Pittsburgh P. L.	9,171.35	
Swiss P. L. Co.	4,482.75	
Riggs Ref.		
Total	14,803,443.87	14,504,111
Increase	32,905.27	
Decrease		299,332

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of September and October, showing the gross stocks and the above fields:

	Sept., '23	Oct., '23
Pennsylvania	3,601,488.55	3,701,813
Lima	888,203.63	937,797
Kentucky	1,998,875.17	1,964,077
Mid-Continent	7,951,689.79	7,344,562
Illinois	363,186.73	555,832
Total	14,803,443.87	14,504,111

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Av. bbls. per wk.—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All Ports
July	110,750	18,750	517,000	185,250	121,750	952,500	.....	139,750	.....	.....	139,750	1,092,250
August	116,067	51,709	688,485	222,873	151,970	1,231,104	.....	24,612	219,030	.....	243,642	1,474,746
September	205 600	47,400	516,200	124,200	126,600	1,000,000	.....	140,600	.....	.....	140,600	1,140,600
October	195,000	56,000	626,000	220,000	107,000	1,178,000	.....	208,000	.....	.....	208,000	1,386,000

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Av. bbls. per wk.—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All Ports
May	114,665	128,750	256,500	109,250	153,750	662,915	335,250	227,500	298,500	63,500	924,750	1,587,665
June	62,800	84,200	358,200	153 400	161,800	757,600	301,000	228,400	212,400	45,800	787 600	1,545,200
July	71,750	116,250	451,500	112,000	218,750	970,250	367,750	280,000	208,250	23,000	879,000	1,849,250
August	116,065	89,113	374,613	102,970	197,127	879,888	338,485	266,224	234,388	45,523	1,295 720	2,175,608
September	53.600	113.000	353,200	132,000	149,600	801,400	355,200	279,400	176,000	44,800	714,200	1,515,600
October	91,250	48,000	298,500	134,000	204,000	800,750	247,000	352,500	95,000	125,000	707,000	1,507,750

PRODUCTION BY MONTHS AND DAILY AVERAGE PRODUCTION IN THE U. S. FOR 12 MONTHS

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Wyoming Montana	Other Fields	Total
1922—										
November:	Month	14,035,537	12,613,560	8,676,000	2,646,091	1,023,450	2,529,150	2,908,800	3,205,290	67,637,878
	Daily average	467,818	420,452	289,200	88,261	34,115	84,305	96,960	106,433	2,255,929
December:	Month	15,426 810	13,185,416	8,707.931	2,649,900	1,596,500	2,463,291	3,108,866	3,149,445	69,288,159
	Daily average	497,639	425,336	280,901	82,330	51,500	79,461	100,286	101,595	2,235,102
1923—										
January:	Month	16,457,445	13,328,574	8,881,009	2,826,611	2,317,002	2,428,018	3,124,707	3,423,516	72,731,882
	Daily average	530,885	425,817	286,484	91,181	74,742	78,323	100,797	110,436	2,345,512
February:	Month	16,426,759	12,045,020	7,663,992	2,748,660	2,258,984	1,084,008	2,922,192	2,907,340	68,645,955
	Daily average	586,670	444,465	273,714	91,622	80,678	87,286	104,364	104,405	2,451,641
March:	Month	19,608,192	13,955,828	8,462,783	2,847,040	2,970,575	2,312,600	3,274,778	3,464,529	66,896,325
	Daily average	632,525	450,188	272,993	91,840	95,825	74,600	105,638	111,759	2,157,301
April:	Month	20,695,959	14,399,610	8,403,240	2,768,052	2,766,000	2,160,300	3,584,045	3,281,340	65,603,546
	Daily average	689,865	479,987	280,108	89,292	92,200	72,010	115,947	109,378	2,186,785
May:	Month	21,535 365	15,658,782	8,932,000	2,805,750	3,389,000	2,175,000	3,566,500	3,546,490	63,603,912
	Daily average	694,689	505,122	288,129	93,525	109,323	70,161	115,051	114,490	2,051,739
June:	Month	22,667,106	15,572,730	8,817,000	2,797,830	3,078,990	1,981,800	3,385,600	3,401,490	61,702,546
	Daily average	755,570	519,091	293.900	93,261	102,633	66,066	122,853	113,380	2,056,752
July:	Month	25,262,082	15,260,184	10,662,000	2,448,566	2,859,000	2,012,000	4,143,400	2,788,600	66,631,832
	Daily average	814,906	492,264	343,935	78,986	92,226	64,903	133,657	89,955	2,149,414
August:	Month	26,440,005	14,049,076	11,454,000	2,316,320	3,113,000	2,078,000	4,180,000	3,473,300	67,103,701
	Daily average	852,903	453,196	369.484	74,720	100,419	67,032	134,861	112,043	2,164,635
September:	Month	25,762,500	12,812,220	12,287,000	2,234,130	3,350,000	1,855,000	4,449,500	5,262,800	68,012,250
	Daily average	858,750	427,074	409,567	74,471	111,666	61,834	148,317	108,760	2,267,075
October:	Month	24,576,000	12,961,782	14,903,000	2,336,346	3,046,100	1,861,000	3,460,000	3,468,200	66,612,428
	Daily average	792,787	418,122	480,742	75,366	98,263	60,032	111,613	111,877	2,148,788
	Twelve months	248,893,760	165,842,782	117,849,954	31,425,296	31,768,501	24,940,167	42,108,491	39,373,160	702,201,111
	Total daily average	681,901	454,391	322,877	86,097	87,037	68,329	115,366	107,869	1,923,837

Between Well and Pump

Modern Economies

Modern economies eliminate waste, and cutting out waste is the straightest road to better business. Preventable losses in oil refining waste materials, time and capital. Oxidation, carburization, coke deposits and corrosion in tubular stills add heavily to refining cost because steel tubes cannot meet modern cracking requirements. Lessen tube failure and you cut production cost. Many refiners know by experience that Calorizing is tube life insurance. It protects still tubes against oxidation, coking, carburization and corrosion by interposing between the steel and the deteriorating forces an armor of aluminum alloy.

Calorized tubes keep the strength of the steel, withstand surrounding temperature of 2000° F., greatly reduce coke deposits and eliminate carburization. Many carloads of Calorized still tubes in refinery service daily prove their economy.

Equip a battery with Calorized tubes throughout and contract by the year for your monthly tube requirements. It pays. Service data prove it. The facts are yours on request.

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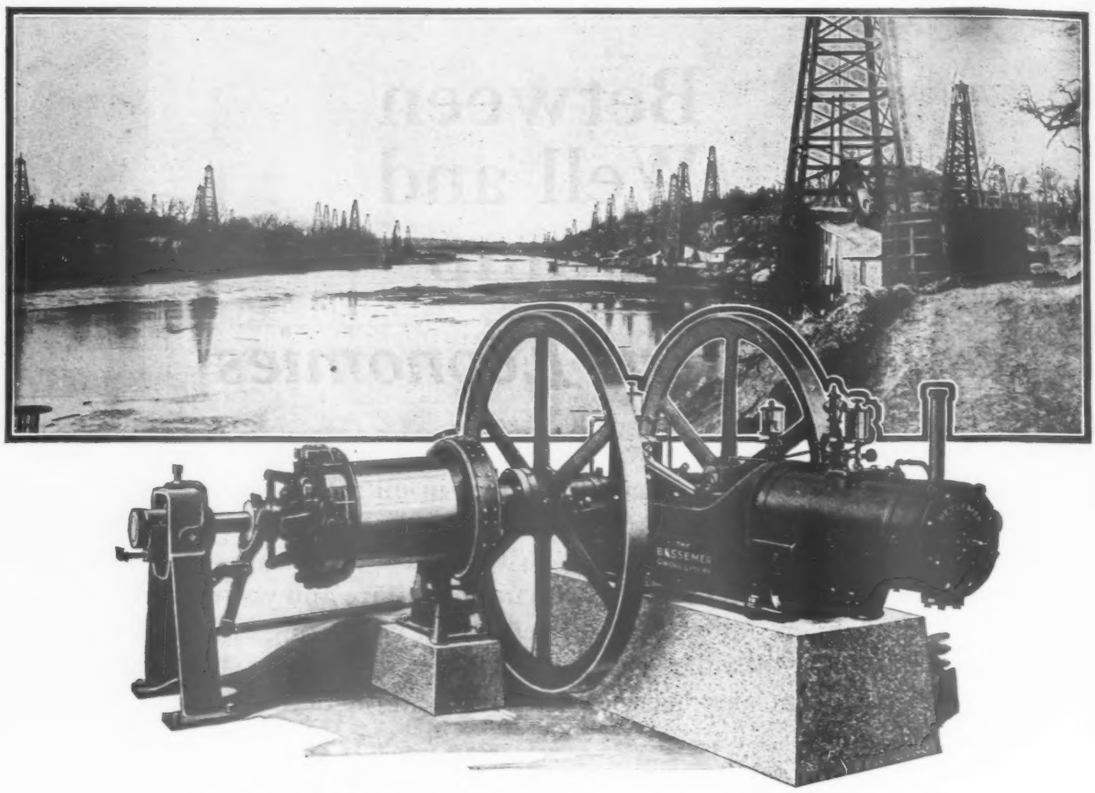

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His answer was brief and to the point.

"It hasn't too many triggers."

Then he went on to say that long experience had exclusively proved to them that Bessemers, because of their simplicity, meet oil-field conditions better than any other engine they had tried—"and we've tried them all."

It doesn't take an expert to make a Bessemer operate—dependable performance *is built into them.* Buy performance—not "triggers"—buy Bessemers.

THE BESSEMER GAS ENGINE COMPANY
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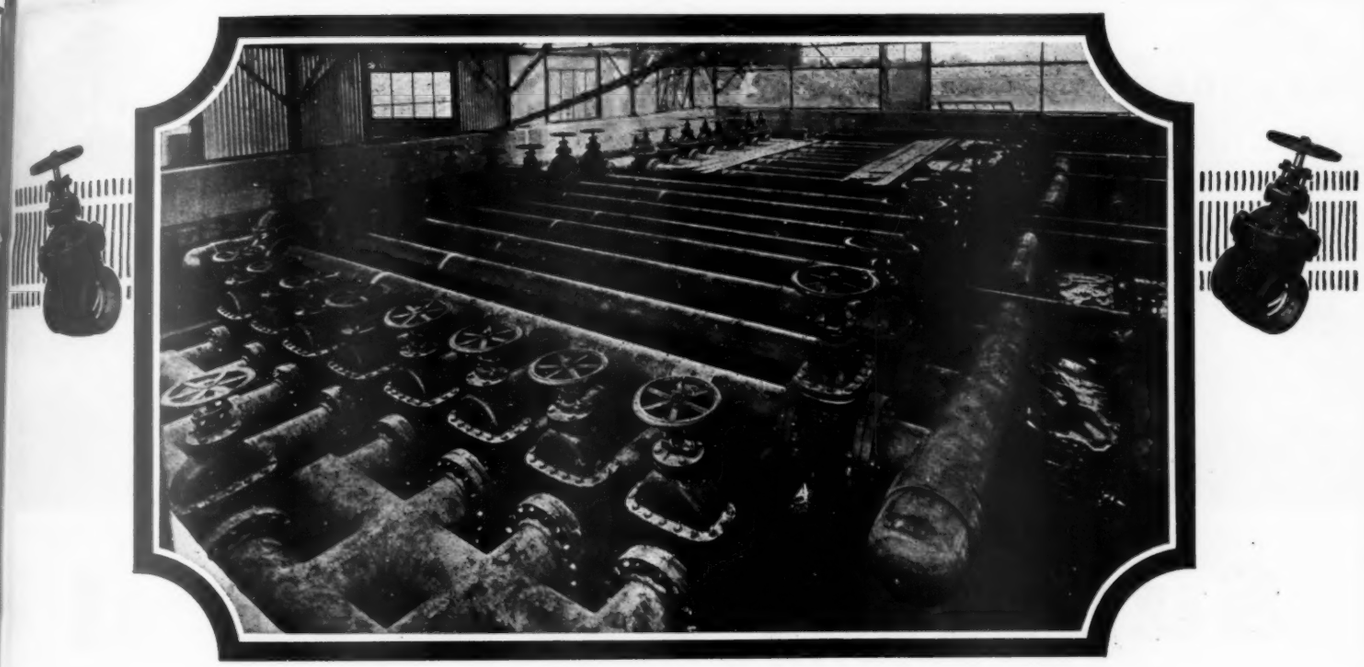


"Now We Buy Gate Valves on a Basis of Longer Life at Lower Cost."

Thus spoke the purchasing agent of a prominent refinery. "For longer than I care to remember, all gate valves to me were **just gate valves.** When new installations were needed we shopped around for prices and the order went to the lowest bidder. Then when ill-fitting seats began to leak and parts wear out, necessitating replacements, we blamed not any particular gate valve, but all valves in general.

"Now we O. K. the valves before we O. K. the order. We know that Darling Gate Valves cost slightly more by the valve but far less by the year of service. We know that their ability to stay tight, their ease of operation and long life without repairs or replacements make Darling Valves a true economy."

Others are realizing a big saving by using the right kind of valve—you can do it, too. Let us send you diagrams showing details of construction. Sent upon request together with catalogue.

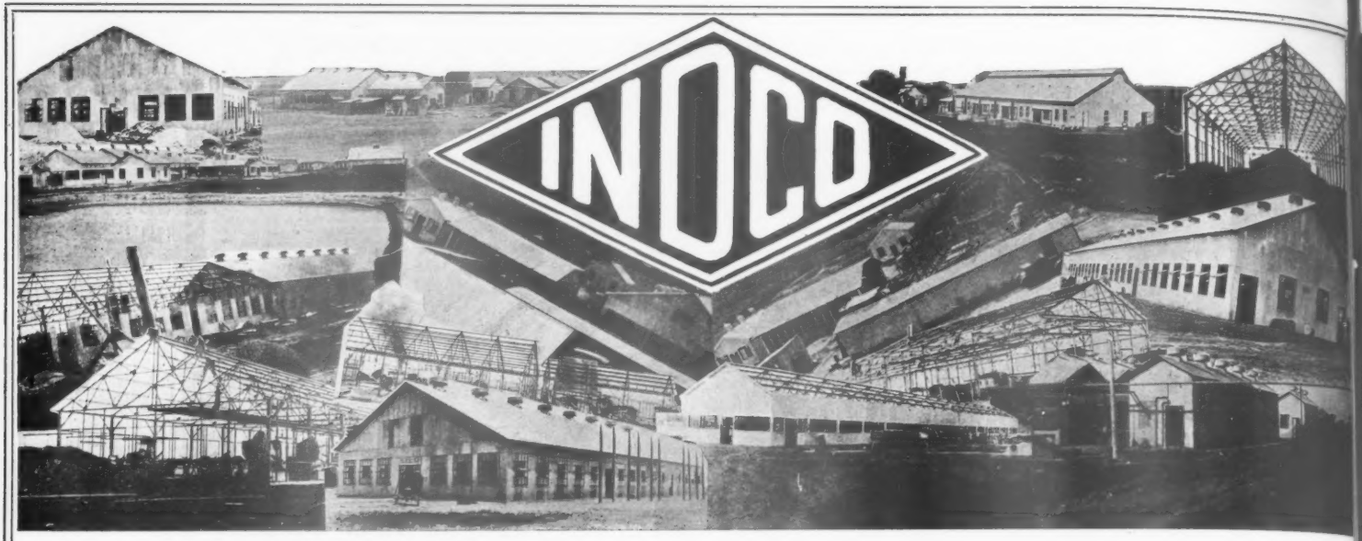
DARLING VALVE & MANUFACTURING CO.
Williamsport, Pa.

NEW YORK CHICAGO OKLAHOMA CITY HOUSTON

830

TRADE DARLING MARK

DARLING
GATE VALVES



Superior Structural Steel Buildings

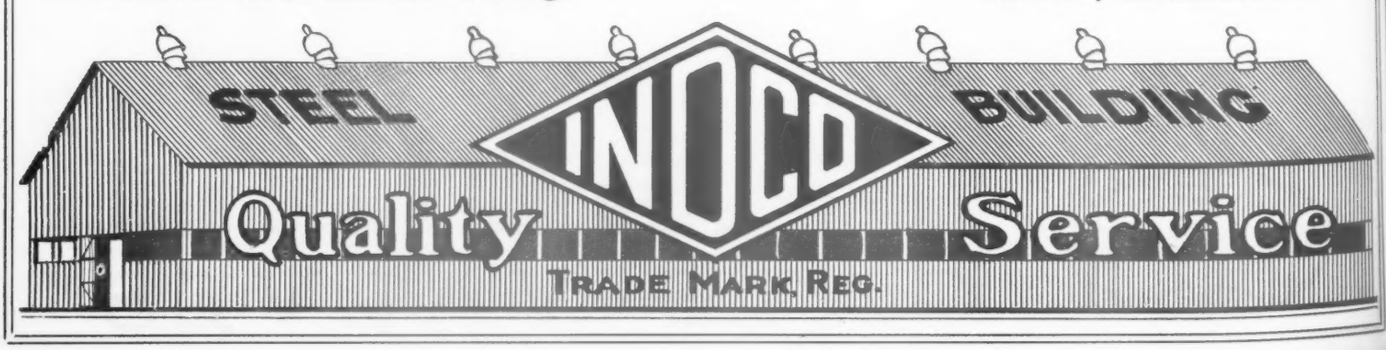
Years of experience in building the larger type of steel buildings for the Oil and Gas Industry enables you to order an INDCO Building with the assurance that you will get a Superior Building.

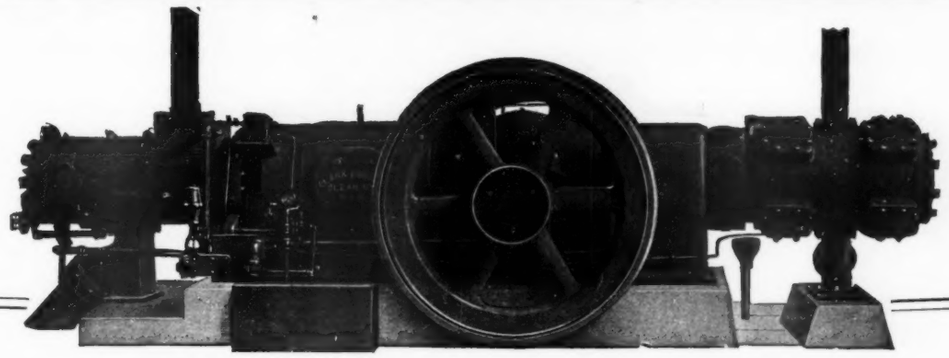
This experience enables us to give you not only the maximum in design, substantial construction and speed in erection, but it gives you all this at a reasonable price.

An estimate from our engineering department will be proof of the reasonable price, and the many INDCO Buildings in the oil fields a guarantee of quality.

Industrial Construction Co.

Central National Bank Bldg. **TULSA, OKLAHOMA**





CLARK
GAS COMPRESSORS

WE HAVE never had a crankshaft failure—Unusual perhaps, but true— the reason is obvious—in the CLARK GAS COMPRESSOR we use an 8-inch Crankshaft.

This point important in itself, is characteristic of the Clark Compressor as a whole—with extra heavy construction and skillful design it also adds the real advantage of more power and greater capacity.

THE CLARK DIRECT DRIVEN GAS COMPRESSOR is the favorite of the operator. This insures low operating cost.

Complete bulletins gladly mailed upon request.

Clark Bros. Co. OLEAN, N.Y.

CLARK BROTHERS COMPANY
Olean, New York
Manufacturers of Gas Compressors and Drilling Engines

Sales Agents:

GAS ENGINEERING & CONSTRUCTION CO.

405 Kennedy Bldg. Tulsa, Okla.
Union Bank Building Pittsburgh, Pa.
208 Consolidated Royalty Bldg. Casper, Wyoming

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY
Copyright 1920 Axelson Machine Company Los Angeles

Another year passes

—and things are setting pretty for you and us.

Comes now the curtain for 1923. It has been a year in which many opinions were expressed and conditions for lots of companies were not so very rosy.

But really it hasn't been a bad year. For us it has been a wonderfully fine year and our sales have gone up and up. Yet the happiest thought is the fact that our list of valued customers has grown—in spite of temporary depression in the oil fields.

Your prospects for 1924 are good—mighty good! Oil is going to prosper. We conscientiously believe things are going to hum along merrily and 1924 will surely bring a harvest of good fortune to you.

Our entire Organization sends you the Season's compliments and our heartiest wishes for a successful new year—the biggest year of prosperity you have ever had.

Cordially,
J. C. AXELSON,
General Manager

AXELSON MACHINE COMPANY

Los Angeles St. Louis

Mid-Continent Office: 1023 Kennedy Bldg., Tulsa, Okla.

Mid-Continent Sales Representatives: Frick-Reid Supply Co.

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS

INDISPUTABLE EVIDENCE NO. 6

M. K. McCOLLUM
A. G. ILSENG

McCOLLUM CONSTRUCTION COMPANY
CONTRACTORS
1507 F. & M. BANK BLDG.
[redacted], TEXAS

ASPHALT-BRICK-CONCRETE
ROADS AND STREETS

Moran, Texas.

July, 12, 1923.

Black, Sivalls, &. Bryson, Inc.

Bartlesville, Oklahoma.

Gentlemen;

I wish to give you some interesting information as to what your Vapor Pressure steel tanks have done for us on our Newman lease near Putnam Texas,

We had three Vapor Pressure tanks of one hundred barrel capacity which we were pumping into direct, and on or about June first your representative suggested that we could raise our gravity by installing one of your fifty barrel Vapor Pressure tanks with a vapor line, which we did.

Here tofore we had been running Oil to the pipe line at Thirty six and six tenths degrees and Thirty Six and nine tenths degrees, Now we are running Oil at Thirty Nine and Four thnths degrees gravity.

We are buying only Vapor Pressure tanks for our various properties, and we feel that they are a very good investment for all producers of high gravity Crude Oil

YOURS VERY TRULY.

McCollum Const Co

"We are buying ONLY vapor pressure tanks . . . . They are a good investment for all producers"

It isn't mere sentiment or friendship for us that is causing the McCollum Construction Co. to buy only Perfection Vapor Pressure Tanks for its various properties.

HERE IS THE BIG REASON: Installation of our tanks has made it possible to add on almost three degrees in gravity to the crude run to the pipe lines.

That means not only more oil sold, but also a higher price since all the pipe lines now are buying on a gravity basis.

Hunt up one of our representatives. Get him to install a battery and you too will agree that the transaction was an investment instead of an expense.

Black Sivalls & Bryson
INC.

BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

OCECO

Guide No. 120 Upo. August 11, 1923—Laboratories' File MP96.
"OCECO" Automatic Tar Plug.
Oil Conservation Engineering Co., The, Submittor, Addison Rd. and N. Y. C. Tracks, Cleveland, O.
STANDARD—Fire.
REEXAMINATION SERVICE.
Guide No. 120 Upo. August 18, 1922—Laboratories' File MP81.
"Oceco" Gauge and Thief Hole Cover for Oil Storage Tanks.
Guide No. 120 Upo. September 28, 1923—Laboratories' File MP95.
"OCECO" Swing Joint and Flanges.
Guide No. 120 Upo. August 17, 1923—Laboratories' File MP127.
"OCECO" Manhole Cover.
Oil Conservation Engineering Co., The, Submittor, Addison Road and N. Y. C. Tracks, Cleveland, O.
STANDARD—Fire.
REEXAMINATION SERVICE.
See description of Reexamination Service on guide card.
Guide No. 120 Upo. August 11, 1923—Laboratories' File MP91.
"OCECO" Oil Still Safety Valve.
Oil Conservation Engineering Co., The, Submittor, Addison Road and N. Y. C. Tracks, Cleveland, O.
STANDARD—Fire.
REEXAMINATION SERVICE.
See description of Reexamination Service on guide card, also General Information Card filed back of guide card.
Guide No. 120 Upo. August 31, 1923—Laboratories' File MP90.
"Oceco" Flame Arrester.
Oil Conservation Engineering Co., The, Submittor, Addison Road and N. Y. C. Tracks, Cleveland, O.
STANDARD—Fire.
REEXAMINATION SERVICE.
See description of Reexamination Service on guide card.
Guide No. 120 Upo. October 17, 1922—Labor
"Oceco" Safety Tank Winch for Oil Stor
Oil Conservation Engineering Co., T
Addison Road and N. Y. Central T
STANDARD—Accident.
REEXAMINATION SERVICE.
August 17, 1922—Laboratories' File MP86.
Oil Conservation Engineering Co., The, Submittor, Addison Road and N. Y. C. Tracks, Cleveland, O.
This card replaces MP86 dated Nov. 18, 1921.

Why the Underwriters' Laboratories Approve OCECO Equipment

OCECO Flame Arrestor
One product of a complete line of evaporation and fire prevention equipment for oil tanks.

In passing the gruelling tests of the Underwriters' Laboratories, equipment rightly meets with conditions much more severe than in actual use.

Consequently, when such equipment gains the approval of this highly respected testing organization, it is certain to give satisfactory service under the most extreme conditions in the field.

The Underwriters' Laboratories approve OCECO Equipment because they have found it meets their most exacting tests—they **know** that it will give satisfactory service in actual use.

The splendid performance of OCECO in the field has in every case substantiated the laboratory results.

The Oil Conservation Engineering Co.

Manufacturers of fire-prevention and evaporation-prevention equipment for tanks

Addison Road and N. Y. C. Tracks — **Cleveland, Ohio**

San Francisco, Calif.
440 Howard Street

Tulsa, Okla.
220 Iowa Bldg.

New York City
140 William Street

Republic of Mexico
Tampico Mexico City Monterrey
Beaumont Export & Import Company
Distributors

Los Angeles, Calif.
318 E. 12th Street

Beaumont, Texas
401-403 Perlstein Bldg.

OCECO

They answer the requirements exactly.

The full cold water pressure then the steam. A constant expansion and contraction in the valve each time a can is washed. Homestead Quarter Turn Valves have proven ideal for this service because:

(1) They open and close easily and quickly with only a quarter turn.

(2) They are made with a heavy section and compact construction so that the constant changes in temperature will not warp or distort the valves.

This letter will convince you that some times the most simple operations and processes present serious valve problems.

Homestead Valve Mfg. Co.,
Homestead, Pa.
Gentlemen:

In regard to the Homestead Plug Cocks which you sold us some time ago for our can washers would say that they answer the requirements exactly.

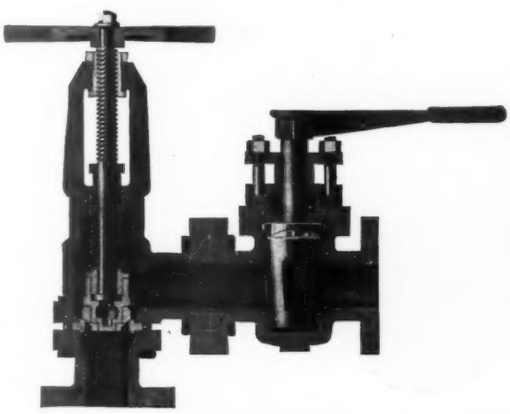
We run the water and steam alternately through a tee and the valves in the water and and steam pipe are open and shut each time a can is placed over the spray.

The other quick opening throttle valves and cocks did not last very long under our working conditions. We occasionally pack the stems.

Yours truly,

Signed_____.

Experience 13



Hovalco-Homestead Blow-Off Combination Valve

The Homestead Valve next to the boiler is spared as much as possible in service and kept in good condition as a reserve. When a new seat is needed in the Hovalco the Homestead can be closed and the Hovalco repaired without shutting down the boiler. We advise using the double blow-off for safety, convenience and economy.

Complies with A. S. M. E. Boiler Code

PRODUCTS
HOMESTEAD QUARTER TURN VALVES
STRAIGHTWAY—THREEWAY—FOURWAY
HOMESTEAD LUBRICATED VALVES
HOVALCO BLOW-OFF VALVES
PROTECTED SEAT (B. & O. PAT.) VALVES
GLOBE—ANGLE—CHECK
PROTECTED SEAT OPERATING VALVES
(B. & O. PAT.)

Send for catalog.

Homestead Valve Manufacturing Co.
Homestead, Penn.
Local Offices in All Cities
See Telephone Directory

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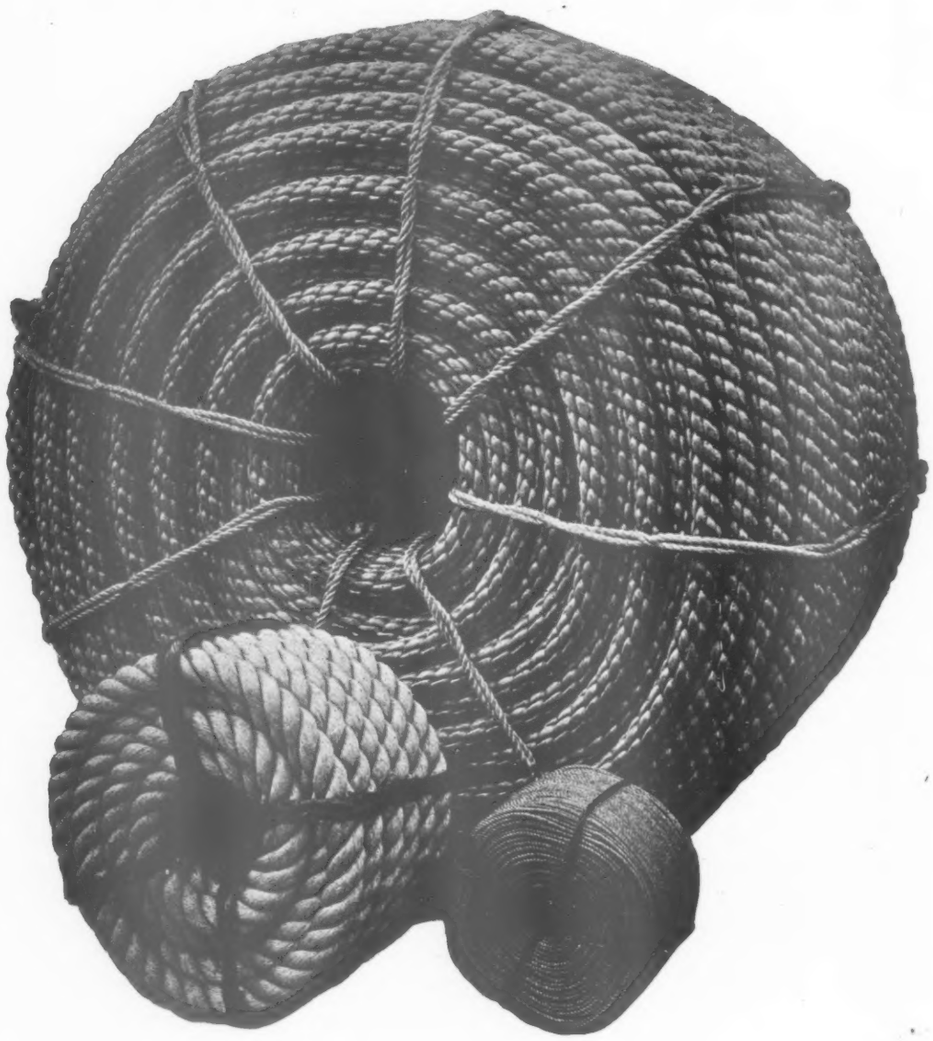
HOMESTEAD

NEW BEDFORD CORDAGE



New Bedford Drilling Cable, Bull Rope and Torpedo Line

MANUFACTURED BY

NEW BEDFORD CORDAGE CO.

ESTABLISHED 1842

General Offices: 120 BROADWAY, NEW YORK CITY

Mills: NEW BEDFORD, MASS.

The Guiberson
Tool Joint Tong
Patented

YOUR FIRST GLANCE DETECTS ITS MERIT

You note FEW PARTS, compared with other tool joint tongs familiar to you. You note RUGGED STRENGTH. You note the obvious SIMPLICITY OF OPERATION, including the simple adjustment for instantly reversing direction of screwing.

This tong was produced to answer a need for a sturdy, common-sense, tool joint tong. Users pronounce it the strongest, most efficient and speediest of all tool joint tongs.

THE GUIBERSON CORPORATION
Box 1106, Dallas, Texas

314 New Daniel Bldg., TULSA | **825 Mason Bldg., HOUSTON** | **506 Trust Bldg., NEWARK, O.**

188

GUIBERSON

BETTER BE SAFE THAN SORRY

International "IDECO"

MILLIONS OF DOLLARS OF LOSS!

Startling but true, as proved by the history of every big storm in the oil fields. Scores of wooden derricks wrecked—suspended operations and consequent enormous losses of oil production. At intervals, almost every year, it happens.

"IDECO" Steel Derricks (galvanized) overcome wind and fire hazards. Wells, so equipped, continue production despite the worst storms.

Strength of structural steel derricks is a certain quantity. Structural shapes are rolled in a great many more sizes and weights than any other form of steel construction. No need to pay for extra weight as a safety factor. "IDECO" design provides the right section in the right place—no guesswork or over-weight about it. The safety standards of the American Society for Testing Materials to which we adhere rigidly, make sure that "IDECO" Derricks will do the work required with entire satisfaction.

STANDARDIZE ON "IDECO" STEEL EQUIPMENT—IT IS WISE ECONOMY

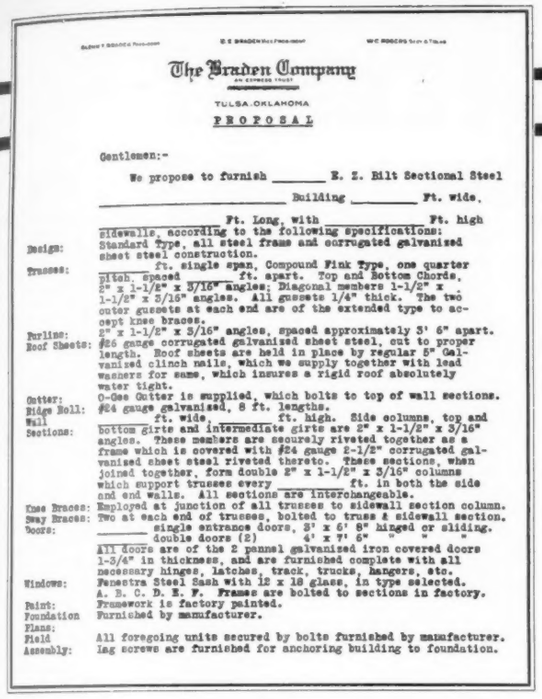
The International Derrick and Equipment Co.
General Offices and Plant: Columbus, Ohio

The largest company devoted exclusively to the manufacture of Steel (Galvanized) Equipment for the Oil, Gas and Artesian Industries

Branch Offices and Warehouses:
Tulsa Shreveport Houston Casper
Los Angeles Bakersfield Oil City
Export Representation

Above: International Steel (galvanized) Derrick in service of the Pure Oil Co. View shows well being shot after it was completed with "IDECO" equipment.
Right: View of "IDECO" all steel rig—the standard with many big companies.

"IDECO" STEEL PRODUCTS for the OIL FIELD



The Braden Company
AN EXPRESS TRUST
TULSA, OKLAHOMA

PROPOSAL

Gentlemen:-

We propose to furnish _____ E. Z. Bilt Sectional Steel _____ Building _____ Ft. wide, _____ Ft. Long, with _____ Ft. high sidewalls, according to the following specifications:

Design: Standard type, all steel frame and corrugated galvanized sheet steel construction.

Trusses: _____ ft. single span, Compound Fink Type, one quarter pitch, spaced _____ ft. apart. Top and Bottom Chords, 2" x 1-1/2" x 3/16" angles; Diagonal members 1-1/2" x 1-1/2" x 3/16" angles. All gussets 1/4" thick. The two outer gussets at each end are of the extended type to accept knee braces.

Purlins: 2" x 1-1/2" x 3/16" angles, spaced approximately 3' 6" apart.

Roof Sheets: #26 gauge corrugated galvanized sheet steel, cut to proper length. Roof sheets are held in place by regular 5" Galvanized clinch nails, which we supply together with lead washers for same, which insures a rigid roof absolutely water tight.

Gutter: O-Gee Gutter is supplied, which bolts to top of wall sections.

Ridge Roll: #24 gauge galvanized, 8 ft. lengths.

Wall Sections: _____ ft. wide, _____ ft. high. Side columns, top and bottom girts and intermediate girts are 2" x 1-1/2" x 3/16" angles. These members are securely riveted together as a frame which is covered with #24 gauge 2-1/2" corrugated galvanized sheet steel riveted thereto. These sections, when joined together, form double 2" x 1-1/2" x 3/16" columns which support trusses every _____ ft. in both the side and end walls. All sections are interchangeable.

Knee Braces: Employed at junction of all trusses to sidewall section column.

Sway Braces: Two at each end of trusses, bolted to truss & sidewall section.

Doors: _____ single entrance doors, 3' x 6' 8" hinged or sliding. _____ double doors (2) 4' x 7' 6" " " " All doors are of the 2 pannel galvanized iron covered doors 1-3/4" in thickness, and are furnished complete with all necessary hinges, latches, track, trucks, hangers, etc.

Windows: Fenestra Steel Sash with 12 x 18 glass, in type selected. A. B. C. D. E. F. Frames are bolted to sections in factory.

Paint: Framework is factory painted.

Foundation Plans: Furnished by manufacturer.

Field Assembly: All foregoing units secured by bolts furnished by manufacturer. Lag screws are furnished for anchoring building to foundation.

TRADE E-Z-BILT MARK

From Proposal To Finished Building

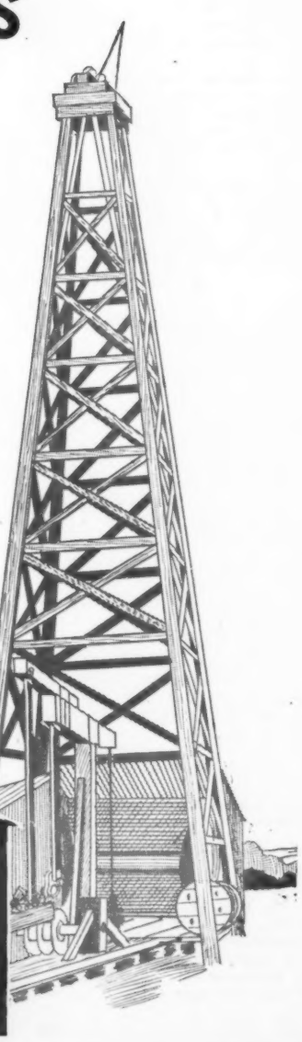
Braden Sectional Steel Houses

offer to the discerning buyer time and labor saving elements which merit careful consideration.

From the proposal, or specification contract to the erected building every effort has been made to make BRADEN SECTIONAL STEEL HOUSES live up to the trade-mark E-Z-BILT, by actual performance.

It is not necessary to consult an engineer or employ a draughtsman before ordering an E-Z-BILT Sectional Steel House. All that need be done is to fill in the specifications of the building you contemplate, in the blank spaces left for that purpose on the proposal, a copy of which is shown above. Nor is it necessary to employ skilled labor to erect E-Z-BILT houses for they can be erected by anyone. They are substantial and strong when erected, yet can be moved as often as desired.

E-Z-BILT Sectional Steel Houses have an established cost price and a 100% salvage value. They are completely fire-proof and adaptable to any size or shape. They are the logical choice for oil industry uses.



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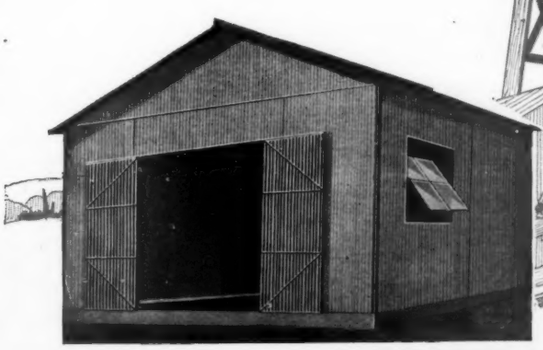
Warehouses
Garages
Boiler Houses

Pump Houses
Tool Houses
Filling Stations
Gasoline Plants



The Braden Company

Tulsa - Okla.

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Shaw, E. W. .....
Shippers' Car Line, Inc.....
Sinclair Refining Co. .....
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South Chester Tube Co.....
Spence, H. M. .....
Spencer Petroleum Co. .....
Stalder, Walter .....
Standard Engineering Co. .....
Standard Machine & Tool Co.....
Stanley Belting Corp.....
Star Drilling Machine Co.....
Stewart Iron Works Co.....
Stewart, Irvine E. .....
Stitt Ignition Co. .....
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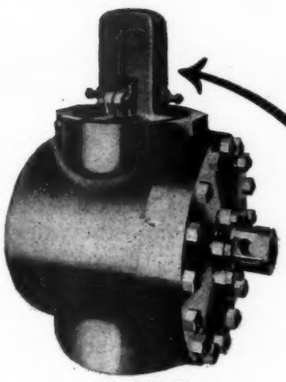
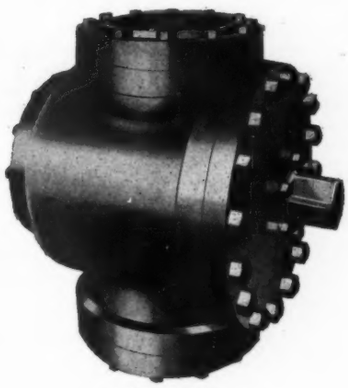
Standard Equipment
CONTROL HEADS

These control heads are modern standard equipment throughout the oil fields, having been in active service for over 10 years, and have met every requirement in this fast growing industry; always assuring perfect control and safety regardless of the size of the well.



Straight Type
Patented

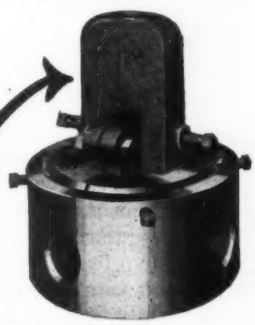


Flange Type
Patented

Both types are made in all the regular sizes from 4⅛ to 13⅝

Casing Heads

Combined utility, strength and durability. No flange or other obstructions to interfere with the placing of the tongs. Many producers are standardizing on these casing heads.



Four-Way Berry Type Casing Head

Roller Oil Saver

Fits into the control or casing heads securely and can be put on instantly without withdrawing tools or cutting the line.

Patented

Tee Casing Head

THE OIL WELL IMPROVEMENTS CO.
Tulsa, Okla.

A Prosperous New Year

The Oil Industry faces the New Year with high hopes and even confidence. The least sanguine, the most constitutionally cautious, share this feeling because they know they have just been through the worst year in the experience of oil and that the possibility of any return to such conditions is so remote as to be not worth considering.

Not only has the blight of overproduction been removed by the rapid decline in California and Powell but we are already back to an equilibrium between production and consumption with consumption constantly increasing through natural growth of population and the broadening uses for petroleum products.

The problem before the industry already is to find sufficient oil to keep pace with that demand. There may be stocks to be worked off but in terms of number of days supply they are insignificant.

It is natural enough, after passingthrough such a year as 1923, that there should be warnings against risking another flood of oil but does any one really expect it? All will agree that there is not a prospective flush field in sight. The new districts are, it is believed, fairly estimated or known. Even should one prove to be another Powell it must be remembered that this year's overproduction was not due to any one or even two fields but to the unprecedented and wildly improbable development of no less than seven phenomenal producing territories.

In this connection the opinions of Admiral Sir E. J. W. Slade, vice chairman of the Anglo Persian Oil Co., published in this issue of The Oil and Gas Journal, based upon a world survey of conditions and prospects, corroborate the opinions of American students of the situation.

Oil men generally decry a prophet and with good reason. Experience has been a stern teacher in that regard. But when all the factors are so favorable as at the opening of 1924, when the known facts as to consumption, growth, increasing demand for oil and its more complete utilization, are considered calmly and compared with the visible supply and what is known of prospective fields, it is impossible to be other than optimistic for the New Year.

General business conditions which measure the consumption of oil are described by such an authority as Secretary of the Treasury A. W. Mellon as most favorable. Thus conditions within and outside the Oil Industry combine to encourage the hearty wishes of The Oil and Gas Journal to oil men everywhere for a Happy and Prosperous New Year.